PROSPECTUS FOR THE

ARDOT ELEVEN POINT MITIGATION BANK

RANDOLPH COUNTY, ARKANSAS

Arkansas Department of Transportation

Environmental Division

March 2023

Table of Contents

I. Project Description

The Arkansas Department of Transportation (ARDOT) proposes the establishment of a stream mitigation bank in Randolph County, Arkansas. The mitigation bank will be located on the northern bank of the Eleven Point River approximately 8 miles northwest of the City of Pocahontas (Figure 1). The property is 17.01-acre of a total 55.62-acre tract that was purchased to off-site wetland impacts for Job 050230. The site located in the Southeast quarter of Section 5, Township 19 North, and Range 1 West (Figure 2). This section of property was selected by ARDOT for the establishment of a mitigation bank to compensate for unavoidable impacts to streams associated with highway construction and maintenance projects authorized under Section 404 of the Clean Water Act.

II. Management Goals and Objectives

The primary goal of this mitigation bank is to stabilize the north riverbank of the Eleven Point River. The existing north bank of the Eleven Point River at this location is experiencing an accelerated lateral migration, which is introducing large amounts of sediment into the river during each bank full event (Figure 4). Restoration efforts to the north bank will be accomplished by terracing approximately 1,200 linear feet of the existing riverbank and installing live fascines and geolifts with live brush, logs and root wads. This work will be accomplished in four different zones.

- Zone 1: Slope; seeded with both permanent and temporary ground cover, planted with bare root trees and shrubs.
- Zone 2: Terrace; seeded with both permanent and temporary ground cover, planted with bare root trees and shrubs over the back half of the terrace and planted with live stakes over the front half of the terrace.
- Zone 3: Slope; seeded with both permanent and temporary ground cover, planted with live stakes.
- Zone 4: Terrace; seeded with both permanent and temporary ground cover planted with live stakes.

Recent historical land use of the site was primarily for agricultural hay production. Construction of the restoration efforts will be done during the drier summer months to reduce the likelihood of flash flood events. The proposed 60% plans are included in Appendix A.

III. Establishment and Operation

An Interagency Review Team (IRT) would facilitate the establishment of the mitigation bank. The IRT would allow review and facilitate consensus from Federal, state, and public entities on the Mitigation Banking Instrument (MBI). The U.S. Army Corps of Engineers Little Rock District (SWL) would serve as Chair of the IRT and make final decisions regarding the terms and conditions of the MBI. Property ownership and sponsorship will be retained by ARDOT. Design, construction, and monitoring associated with the mitigation bank will be overseen by ARDOT.

Agencies invited to participate on the IRT include the U.S. Environmental Protection Agency, Region VI (EPA); the U.S. Fish and Wildlife Service, Region IV (USFWS); the Federal Highway Administration, Arkansas Division (FHWA); the Arkansas Division of Environmental Quality (ADEQ); the Arkansas Game and Fish Commission (AGFC); the Arkansas Natural Heritage Commission (ANHC); and the Arkansas Natural Resources Division (ANRD).

IV. Proposed Service Area

The geographic service area (Figure 3) would include the sub-basins (8-digit HUCs) in the Ozark Highlands. This includes primary service areas of the Eleven Point and Spring and the Strawberry as a secondary service area. These sub-basins all are encompassed by the Upper White sub-region (HUC 110100). The corresponding United States Geologic Service (USGS) cataloging codes are listed below in Table 1.

Table 1. USGS Hydrologic Unit Codes for Sub-Basins in the Geographic Service Area

Sub-basin Name	HUC	Service Area
Eleven Point	11010011	Primary
Spring	11010010	Primary
Strawberry	11010012	Secondary

V. General Need and Feasibility

ARDOT is required to mitigate unavoidable losses to streams due to highway construction projects. The proposed service areas are located within an area that has no available stream mitigation banks to service the demand of regular road construction and maintenance activity and would be a readily available resource for future ARDOT activities in the area. ARDOT has trained staff skilled in the planning and implementation of stream mitigation instrument and has working relationships with the state of Arkansas' natural resource agencies.

VI. Ownership

ARDOT is the owner of the property for approximately 900 linear feet of the restoration project. ARDOT had previously recorded a restriction on the Warranty Deed for the total 55.62-acre property. The remaining 300 linear feet of the total 1,200 linear feet restoration project will be completed under a temporary construction easement on the adjacent landowner. The restriction on ARDOT's property requires that any activity on the property comply with the terms of a mitigation plan or banking instrument. ARDOT will manage its property for the operational life of the bank. The operational life of the bank terminates when compensatory mitigation credits have been exhausted and the bank site is self-sustaining. Subsequently, ARDOT may enter into a

management agreement with an appropriate state or Federal agency, or conservation organization provided the selected organization manages the property in accordance with the provisions of the MBI.

VII. Long-term management

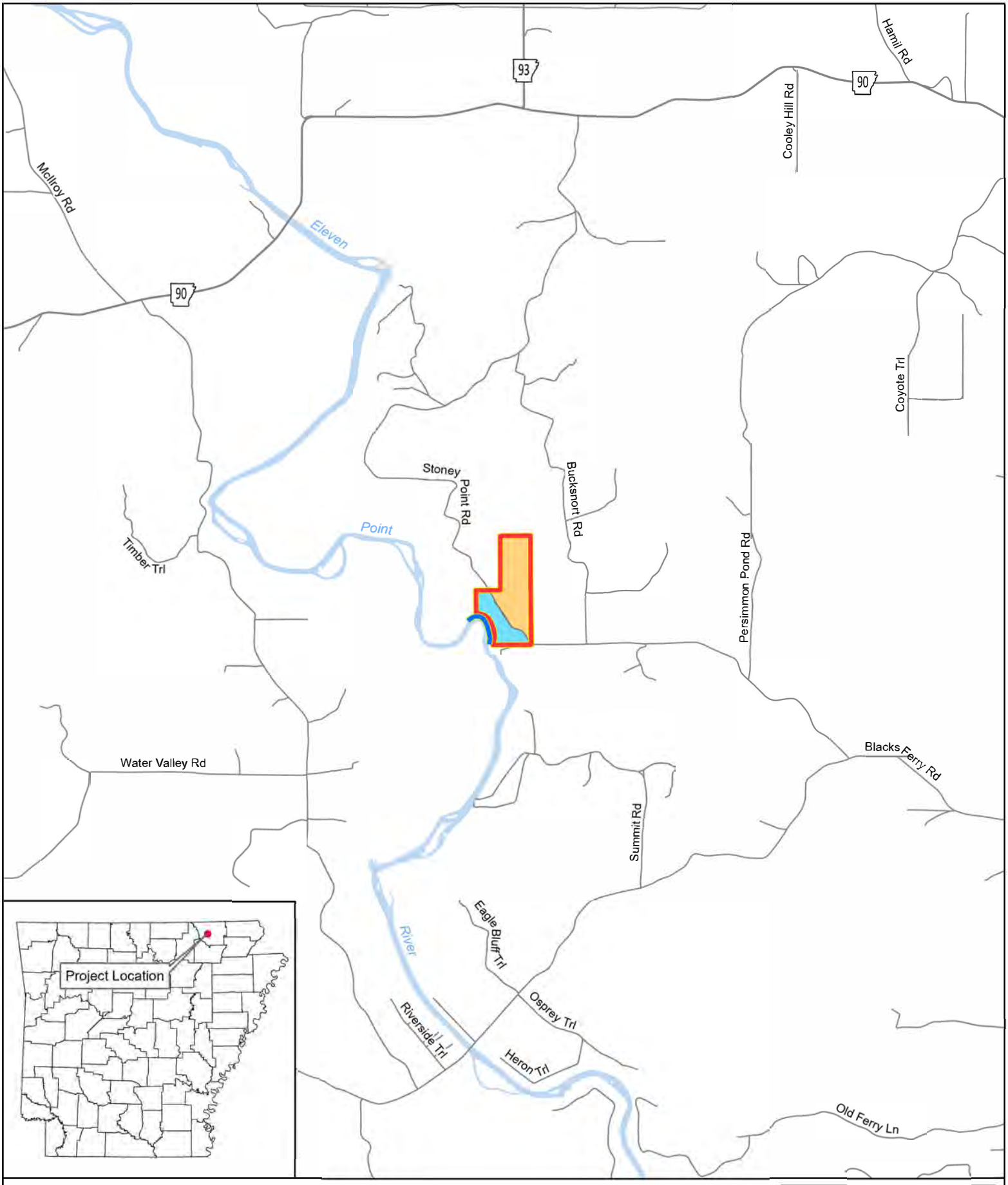
ARDOT is responsible for securing adequate funding to monitor and maintain the mitigation bank throughout its operational life, as well as beyond the operational life if not self-sustaining. ARDOT would be responsible for securing sufficient funds to cover contingency actions in the event of default or failure.

VIII. Qualifications of the sponsor

ARDOT is presently the owner and sponsor of nine mitigation banks, totaling 2,709 acres of stream and/or wetland mitigation property managed according to approved banking instruments. The ARDOT Environmental Natural Resource Section has an expert staff of environmental professionals that have been instrumental in the establishment of several mitigation banks.

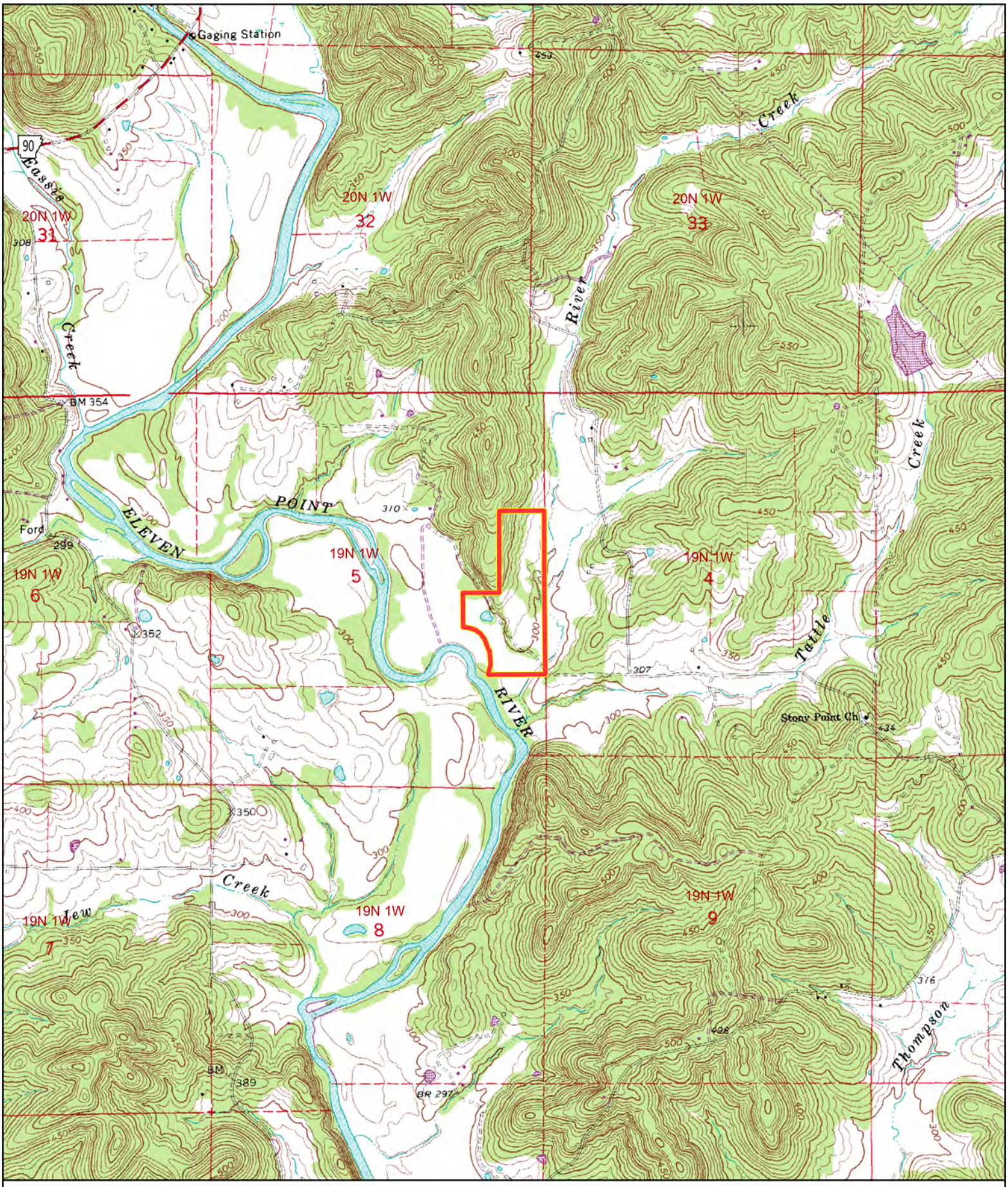
IX. Ecological Suitability

The primary considerations for the selection of this site include watershed needs and the need to stabilize a stream bank that is actively migrating. This property is suitable for helping restore a portion of the Eleven Point River's natural state of equilibrium. Restoring the north bank on the Eleven Point River will reduce sediment loads entering into the river during bank full flood events.



Job 101115
ARDOT - Environmental GIS - Strawn
April 21, 2022

Figure 1
Eleven Point River
Stream Restoration



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Job 101115
ARDOT - Environmental GIS - Strawn
April 21, 2022

Figure 2
USGS Topographic Map

Mitigation Property

USGS Topographic Map:
Ravenden Springs SE 1981

Figure 3
Service Areas

Job 101115
ARDOT - Environmental GIS - Strawn
May 5, 2022

N

0 150 300

Feet

Job 101115
ARDOT - Environmental GIS - Strawn
April 21, 2022

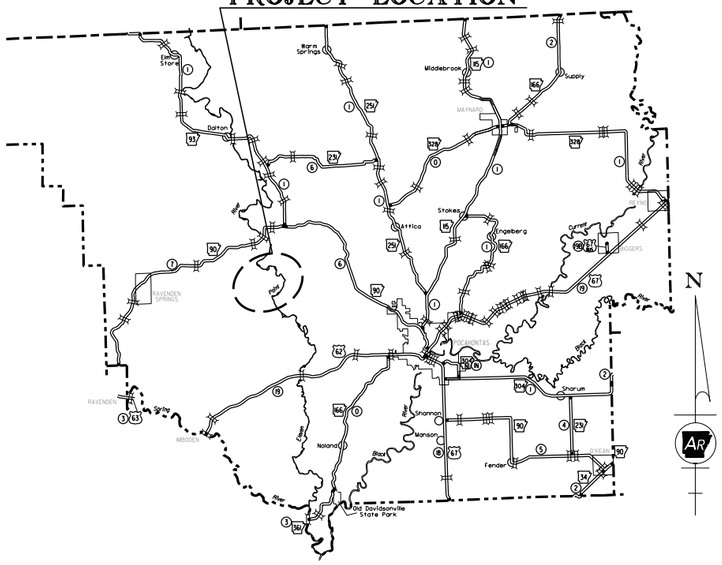
Figure 4
Eleven Point River Mitigation Plan

Mitigation Property
Riverbank Stabilization Area
Temp. Construction Easement

Photography: ADOP 2017

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	1	19
		ELEVEN POINT RIVER STREAM RESTORATION (S)				

PROJECT LOCATION



VICINITY MAP

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS

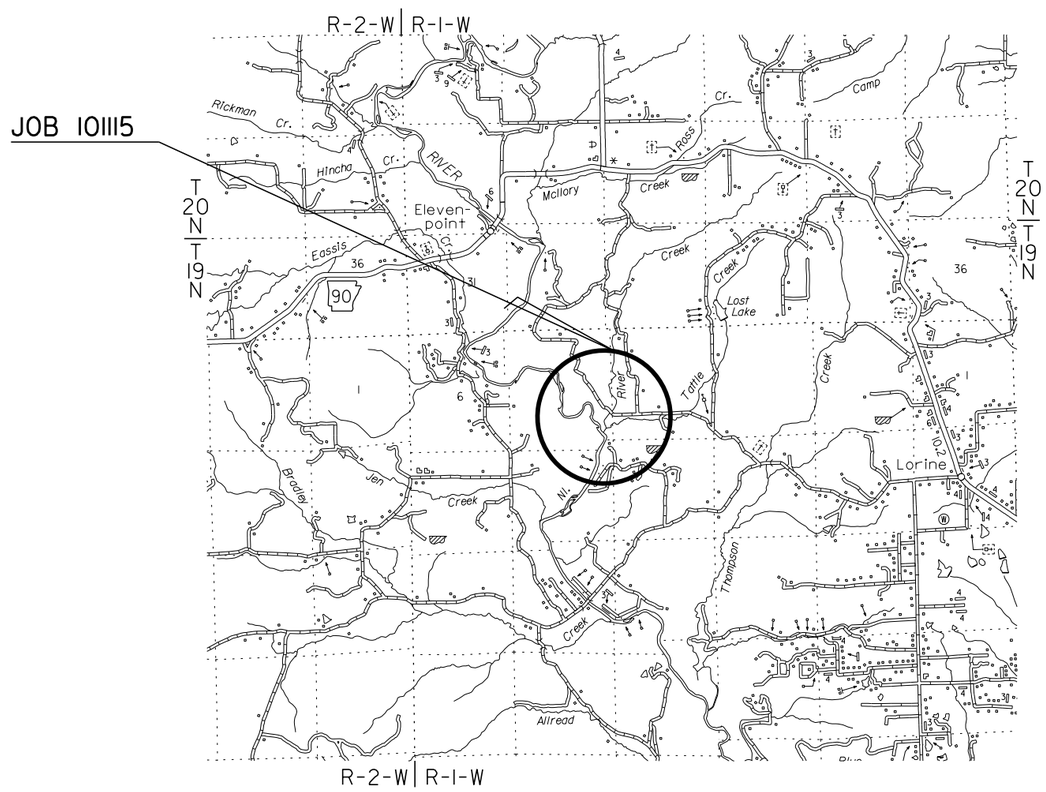
ELEVEN POINT RIVER STREAM RESTORATION (S)

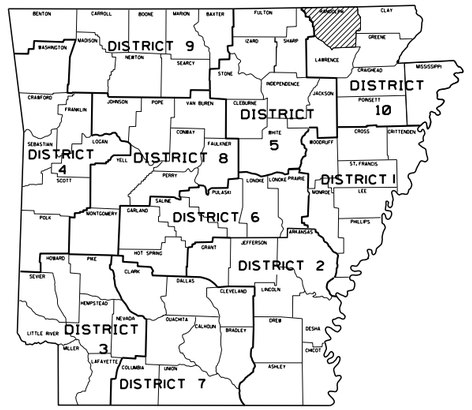
RANDOLPH COUNTY

JOB 101115

FED. AID PROJ. STPF-0061(25)

NOT TO SCALE





ARKANSAS HIGHWAY DISTRICT 10

	BEGIN OF PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°19'12"	N 36°19'12"	N 36°19'06"
LONGITUDE	W 91°05'59"	W 91°05'53"	W 91°05'52"

CERTIFICATE OF AUTHORIZATION
MICHAEL BAKER INTERNATIONAL INC
No. 1126
ARKANSAS - ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY

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WORKSPACE: ARDOT
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	2	19
		INDEX OF SHEETS AND STANDARD DRAWINGS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

INDEX OF SHEETS

STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	3	19
		GOVERNING SPECIFICATIONS AND GENERAL NOTES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
105-4	MAINTENANCE DURING CONSTRUCTION
107-2	RESTRAINING CONDITIONS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
620-1	MULCH COVER
JOB 101115	BARE FOOT SEEDLINGS
JOB 101115	BIDDING REQUIREMENTS AND CONDITIONS
JOB 101115	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 101115	CARGO PREFERENCE ACT REQUIREMENTS
JOB 101115	COIR FIBER MATTING
JOB 101115	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 101115	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 101115	ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT
JOB 101115	FLEXIBLE BEGINNING OF WORK
JOB 101115	GEOLIFT
JOB 101115	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 101115	LIVE BRUSH FASCINE
JOB 101115	LIVE STAKES
JOB 101115	MANDATORY ELECTRONIC CONTRACT
JOB 101115	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 101115	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 101115	REMOVING AND REPLACING TOPSOIL
JOB 101115	SPECIAL SEEDING - PERMANENT
JOB 101115	SPECIAL SEEDING RQUIREMENTS
JOB 101115	SPECIAL TEMPORARY SEEDING AND MULCH COVER
JOB 101115	STORM WATER POLLUTION PREVENTION PLAN

GENERAL NOTES

1. THE CONTRACTOR IS REQUIRED TO INSTALL IN-STREAM STRUCTURES USING A TRACK HOE WITH A HYDRAULIC THUMB OF SUFFICIENT SIZE TO PLACE BOULDERS (4'x3'x2'), LOGS AND ROOT WADS.
2. WORK IS BEING PERFORMED AS AN ENVIRONMENTAL RESTORATION PLAN. THE CONTRACTOR SHOULD MAKE ALL REASONABLE EFFORTS TO REDUCE SEDIMENT LOSS AND MINIMIZE DISTURBANCE OF THE SITE WHILE PERFORMING THE CONSTRUCTION WORK.
3. CONTRACTOR SHOULD CALL ARKANSAS "ONE-CALL" BEFORE EXCAVATION STARTS. (811 or 1-800-482-8998)
4. TOPSOIL SHALL BE EXCAVATED TO A DEPTH OF 8" AND STOCKPILED SEPARATELY FROM UNDERCUT SOIL. 6" OF TOPSOIL SHALL BE PLACED ON ALL TERRACES AND IF AND WHERE DIRECTED BY THE ENGINEER.
5. ALL DISTURBED EMBANKMENTS SHALL BE MATTED WITH COIR FIBER MATTING OR IF AND WHERE DIRECTED BY THE ENGINEER.
6. ALL STREAM BANKS SHALL BE LIVE STAKED.
7. UNLESS THE ALIGNMENT IS BEING ALTERED, THE EXISTING CHANNEL DIMENSIONS ARE TO REMAIN, UNLESS OTHERWISE NOTED.
8. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
9. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
10. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
11. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
13. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 27 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	4	19
		LEGEND & VEGETATION SELECTION				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

LEGEND

- ROCK J-HOOK
- GRADE CONTROL ROCK J-HOOK
- ROCK VANE
- OUTLET PROTECTION
- ROCK CROSS VANE
- ROCK DOUBLE DROP ROCK CROSS VANE
- SINGLE WING DEFLECTOR
- DOUBLE WING DEFLECTOR
- TEMPORARY SILT CHECK
- ROOT WAD
- LOG J-HOOK
- GRADE CONTROL LOG J-HOOK
- LOG VANE
- LOG STEP
- LOG CROSS VANE
- LOG AND ROCK STEP POOL
- BOULDER STEP
- CONSTRUCTED RIFFLE
- BOULDER CLUSTER
- ROCK STEP POOL
- JURISDICTIONAL WETLAND BOUNDARY

**NOTE: ALL ITEMS ABOVE MAY NOT BE USED ON THIS PROJECT

- SAFETY FENCE
- SILT FENCE
- 100 YEAR FLOOD PLAIN
- CONSERVATION EASEMENT
- 435 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- LIMITS OF DISTURBANCE
- PROPERTY LINE
- FOOT BRIDGE
- TEMPORARY STREAM CROSSING
- PERMANENT STREAM CROSSING
- TRANSPLANTED VEGETATION
- X TREE REMOVAL
- TREE PROTECTION
- CHANNEL PLUG
- STABILIZATION / RESTORATION AREA
- BRUSH TOE WITH MATTING AND DOUBLE LIVE STAKES
- GEOLIFT WITH BRUSH TOE
- GEOLIFT WITH LIVE BRUSH, LOGS, AND ROOT WADS
- NON-CREDITED JURISDICTIONAL WETLANDS
- WETLAND RE-ESTABLISHMENT
- WETLAND ENHANCEMENT

Proposed Bare-Root and Live Stake Species

Botanical Name	Common Name	% Planted by Species	Wetland Tolerance
All Buffer Plantings at 680 stems/acre using 8' X 8' spacing			
Riparian Zone – Overstory/Canopy Species			
Populus deltoides	Cottonwood	15%	FAC
Acer saccarinum	Silver Maple	15%	FAC
Celtis occidentalis	Hackberry	10%	FACU
Liriodendron tulipifera	Tulip Poplar	10%	FACU
Betula nigra	River Birch	15%	FACW
Platanus occidentalis	Sycamore	15%	FACW
Diospyros virginiana	Persimmon	5%	FAC
Quercus phellos	Willow Oak	5%	FAC
Quercus palstris	Pin Oak	5%	FACW
Quercus michauxii	Swamp Chestnut Oak	5%	FACW
Riparian Zone – Understory/Shrub Species			
Aronia melanocarpa	Black Chokeberry	15%	FACW
Cephalanthus occidentalis	Buttonbush	20%	OBL
Cornus amomum	Silky Dogwood	15%	FACW
Amorpha fruticosa	False Indigo	10%	FACW
Crataegus viridis	Green Hawthorn	10%	FACW
Physocarpus opulifolius	Ninebark	15%	FAC
Salix interior	Sandbar Willow	15%	OBL
Streambank Live Stake Mix and Live Branch Species			
Salix interior	Sandbar Willow	20%	FACW
Cephalanthus occidentalis	Buttonbush	10%	OBL
Cornus amomum	Silky Dogwood	20%	FACW
Salix nigra	Black Willow	25%	OBL
Populus deltoides	Cottonwood	25%	FAC

VEGETATION SELECTION

REFER TO SPECIAL PROVISIONS FOR ADDITIONAL CONSTRUCTION INFORMATION.

Permanent Seed Mixture for Riparian Areas

Botanical Name	Common Name	% Planted by Species	Density (lbs/ac)	Wetland Tolerance
Agrostis alba	Redtop	10%	1.5	FACW
Elymus virginicus	Virginia Wildrye	15%	2.25	FACW
Panicum virgatum	Switchgrass	15%	2.25	FAC
Tripsacum dactyloides	Eastern Gamma Grass	5%	0.75	FACW
Polygonum pennsylvanicum	Pennsylvania Smartweed	5%	0.75	FACW
Schizachyrium scoparium	Little Blue Stem	5%	0.75	FACU
Juncus effusus	Soft Rush	5%	0.75	FACW
Bidens frondosa (or aristosa)	Beggars Tick	5%	0.75	FACW
Coreopsis lanceolata	Lance-Leaved Tick Seed	10%	1.5	FACU
Dichanthelium clandestinum	Tioga Deer Tongue	15%	2.25	FAC
Andropogon gerardii	Big Blue Stem	5%	0.75	FAC
Sorghastrum nutans	Indian Grass	5%	0.75	FACU
	Total	**100%**	**15**	

Note: Final species selection may change due to refinement of site conditions or to availability at the time of planting. If species substitution is required, the planting Contractor will submit a revised planting list to the Engineer for approval prior to the procurement of plant stock.

Permanent Seed Mixture for Upland Areas

Botanical Name	Common Name	% Planted by Species	Density (lbs/ac)	Wetland Tolerance
Andropogon gerardii	Big Blue Stem	34.9%	6.98	FAC
Panicum virgatum	Switchgrass	27.0%	5.4	FAC
Elymus virginicus	Virginia Wildrye	21.0%	4.2	FACW
Sorghastrum nutans	Indian Grass	9.0%	1.8	FACU
Rudbeckia hirta	Blackeyed Susan	3.0%	0.6	FACU
Chamaecrista fasciculata	Partridge Pea	2.0%	0.4	FACU
Heliopsis helianthoides	Oxeye sunflower	1.5%	0.3	UPL
Coreopsis tinctoria	Plains Coreopsis	1.0%	0.2	FAC
Desmodium canadense	Showy Tricktrefoil	0.4%	0.08	FAC
Asclepias syriaca	Common Milkweed	0.1%	0.02	UPL
Monarda fistulosa	Wild Bergamot	0.1%	0.02	FACU
	Total	**100%**	**20**	

Note: Final species selection may change due to refinement of site conditions or availability at the time of planting. If species substitution is required, the planting Contractor will submit a revised planting list to the Engineer for approval prior to the procurement of plant stock.

Temporary Seeding Selection and Application Rates

Botanical Name	Common Name	Application Time	Application Rate	Total (lbs/acre)
Secale cereale	Cereal Rye	September - March	3 lb/1,000 sq ft.	130 lbs/acre
Urochloa ramosa	Browntop millet	April - August	1 lb/1,000 sq ft.	44 lbs/acre

LEGEND & VEGETATION SELECTION

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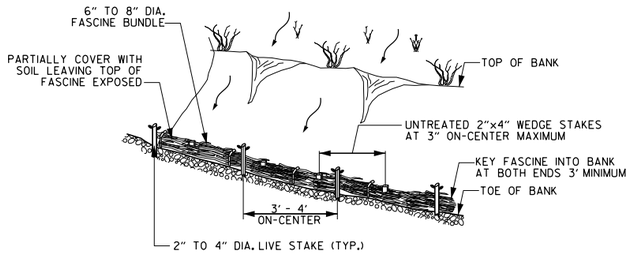
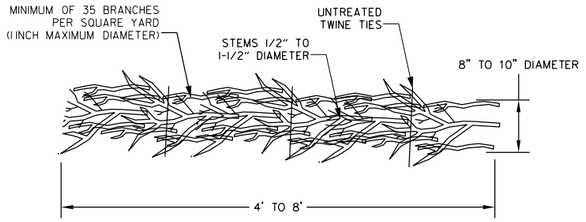
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	5	19
		STREAM RESTORATION DETAILS				

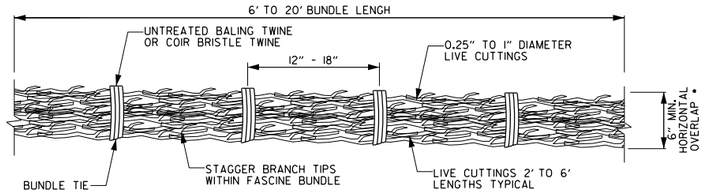
LIVE FASCINE



ISOMETRIC VIEW
SHOWN ON SURFACE FOR CLARITY
FASCINES SHALL BE TRENCHED IN AS SHOWN IN SECTION VIEW

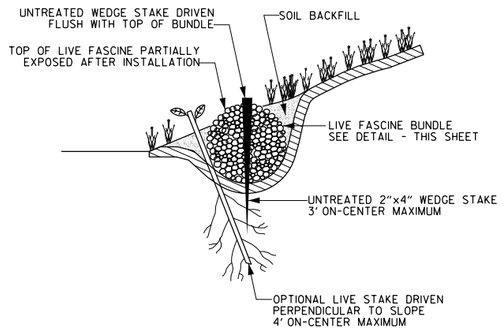


PLAN VIEW

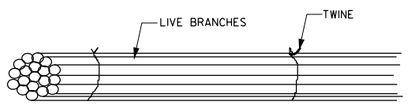


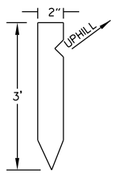
LIVE FASCINES DETAIL

* FINAL DIAMETER WHEN FRIMLY COMPRESSED AND TIED



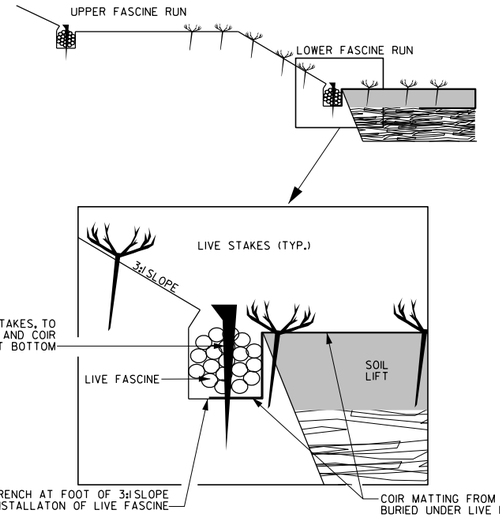
SECTION VIEW





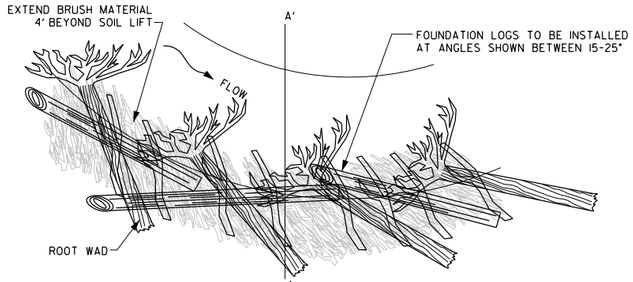
TYPICAL STAKE

NOTE
1. BOARD FOR STAKE SHALL BE 2" X 4" X 3'

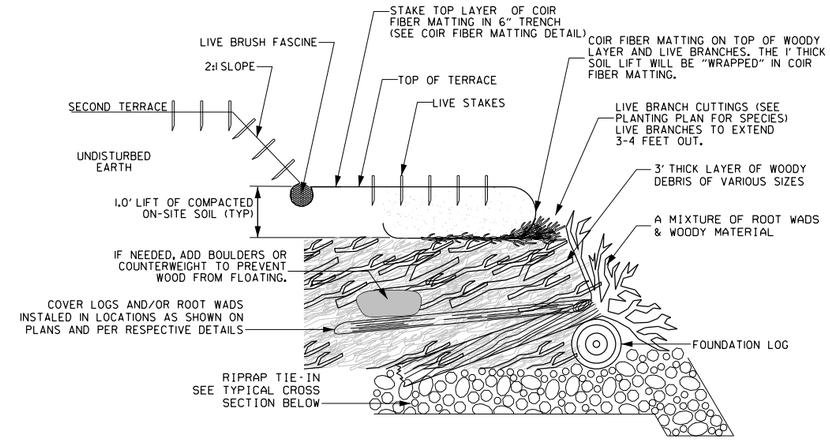


1. LIVE FASCINES ARE CYLINDRICAL BUNDLES OF LIVE BRANCH CUTTINGS USED AS A BANK STABILIZATION MEASURE TO PROTECT BANK ANT TOE FROM SURFACE EROSION, TRAP SEDIMENTS, AND INCREASE SLOPE STABILITY WITH A DEVELOPED ROOT SYSTEM. FASCINES ARE USED ABOVE THE BASE FLOW ELEVATION OF A SLOPE TO TRAP SEED AND SEDIMENT AND TO ENHANCE CONDITIONS FOR COLONIZATION OF NATIVE VEGETATION USED IN THE BUNDLES.
2. CONSTRUCTION OF FASCINES ON SLOPES SHALL CONFORM TO ASTM D 6599.
3. THIS MEASURE MAY BE COMBINED WITH OTHER SLOPE STABILIZATION MEASURES INCLUDING LIVE STAKES, EROSION CONTROL BLANKET, TURF REINFORCEMENT, BRUSH MATTRESSES, AND LONGITUDINAL STONE TOE.
4. FACINES ARE NOT SUITABLE FOR USE ON SLOPES COMPRISED OF SAND, GRAVEL, OR ROCK, OR ON SLOPES THAT ARE NOT IN FULL SUNLIGHT. FASCINES SHALL NOT BE USED WHERE THEY WILL BE SUBJECTED TO CONCENTRATED FLOW FROM ABOVE THE STREAMBANK OR WHERE CHANNEL FLOW VELOCITIES EXCEED 12 FEET PER SECOND.
5. FASCINES SHALL BE PLACED ON A SLOPE ALONG THE CONTOUR AND SHALL BE KEYED INTO BANK AT BOTH ENDS OF THE FASCINE ROW A MINIMUM OF 3 FEET.
6. FASCINE BUNDLES SHALL BE CONSTRUCTED OF LIVE DORMANT BRANCH CUTTINGS RANDOMLY BOUND TOGETHER WITH UNTREATED TWINE EVERY 12 TO 18 INCHES. BASAL (CUT) ENDS OF BRANCHES SHALL BE ALTERNATING WITHIN THE FASCINE BUNDLE.
7. UNTREATED 2"x4" WEDGE STAKES SHALL BE INSTALLED FLUSH WITH THE TOP OF THE FASCINE BUNDLES AND SHALL BE SPACED AT 3 FEET ON-CENTER MAXIMUM.
8. LIVE DORMANT BRANCH CUTTINGS SHALL BE OBTAINED FROM LOCAL SOURCES APPROVED BY THE ENGINEER. PAYMENT FOR LIVE FASCINES SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR THE CONSTRUCTION OF THE LIVE FASCINE.

GEOLIFT WITH LIVE BRUSH, LOGS AND ROOT WADS

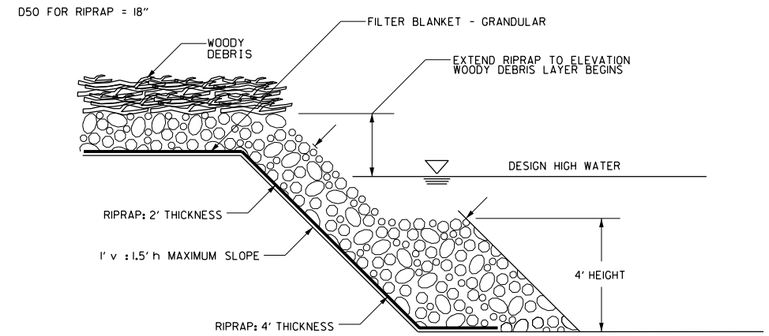


PLAN VIEW



A - A' SECTION VIEW

TYPICAL STONE CROSS SECTION (APPLIED BELOW GEOLIFT)

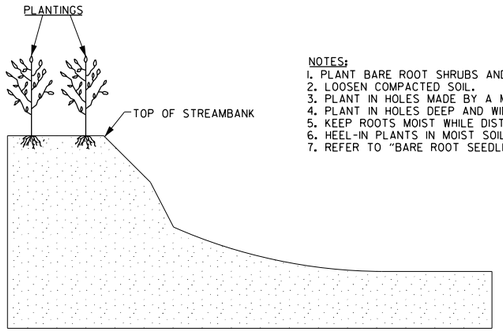


STREAM RESTORATION DETAILS

Rajvan.Chowdhury 8/26/2022 9:00:15 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_181172_10115_ElevenPointStreamRestoration\Design\CIVIL\Drawings\R10115_05_SD_01.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	6	19
		STREAM RESTORATION DETAILS				

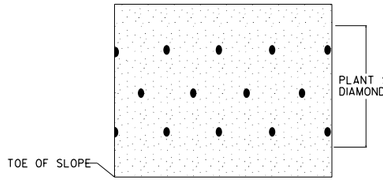
PLANTING SPECIFICATIONS: BARE ROOT SEEDLINGS



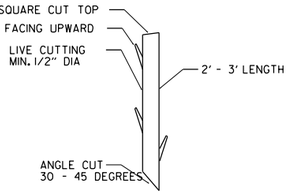
CROSS SECTION VIEW OF BARE ROOT PLANTING

NOTES:
1. PLANT BARE ROOT SHRUBS AND TREES TO THE WIDTH OF THE BUFFER AS SHOWN ON THE PLANS.
2. LOOSEN COMPACTED SOIL.
3. PLANT IN HOLES MADE BY A MATTOCK, DIBBLE, PLANTING BAR, OR OTHER APPROVED MEANS.
4. PLANT IN HOLES DEEP AND WIDE ENOUGH TO ALLOW THE ROOTS TO SPREAD OUT AND DOWN WITHOUT J-ROOTING.
5. KEEP ROOTS MOIST WHILE DISTRIBUTING OR WAITING TO PLANT BY MEANS OF WET CANVAS, BURLAP, OR STRAW.
6. HEEL-IN PLANTS IN MOIST SOIL OR SAWDUST IF NOT PROMPTLY PLANTED UPON ARRIVAL TO PROJECT SITE.
7. REFER TO "BARE ROOT SEEDLINGS" SPECIAL PROVISION.

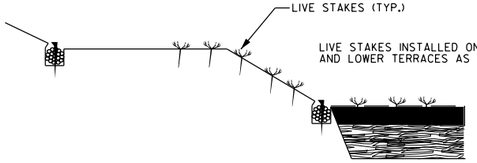
LIVE STAKING



PLAN VIEW



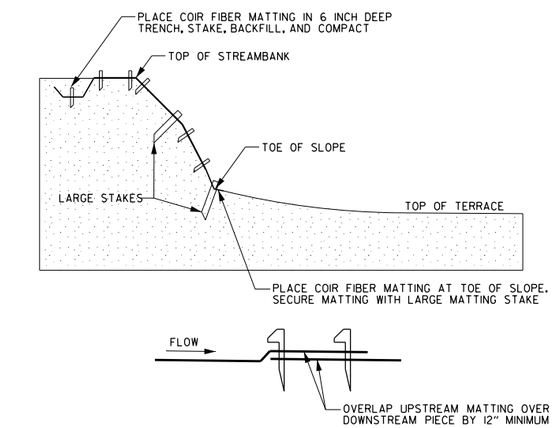
LIVE STAKE DETAIL



CROSS SECTION VIEW

NOTES:
1. IF POSSIBLE, STAKES SHOULD BE CUT AND INSTALLED ON THE SAME DAY.
2. DO NOT INSTALL STAKES THAT HAVE BEEN SPLIT.
3. STAKES MUST BE INSTALLED WITH BUDS POINTING UPWARDS.
4. STAKES SHOULD BE INSTALLED PERPENDICULAR TO BANK.
5. STAKES SHOULD BE 1/2 TO 2 INCHES IN DIAMETER AND 2 TO 3 FT LONG.
6. STAKES SHOULD BE INSTALLED LEAVING 1/5 OF STAKE ABOVE GROUND.
7. REFER TO "LIVE STAKE" SPECIAL PROVISION.

COIR FIBER MATTING



CROSS SECTION VIEW

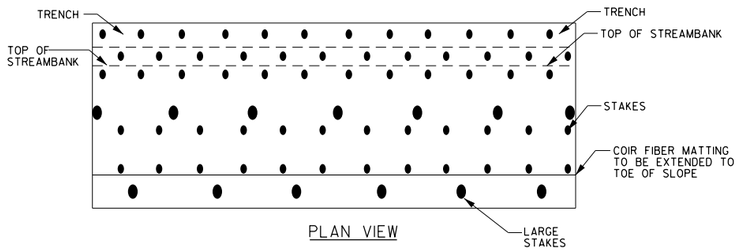
NOTES:
1. BANKS SHOULD BE SEEDED PRIOR TO PLACEMENT OF MATTING.
2. INSTALL COIR FIBER MATTING PER SPECIFICATIONS ALONG STREAM BANKS OR IN OTHERS LOCATIONS SPECIFIED BY ENGINEER.
3. LARGE STAKES SHOULD NOT BE SPACED FURTHER THAN 36" APART.
4. PLACE LARGE STAKES ALONG ALL SEAMS, IN THE CENTER OF BANK, AND TOE OF SLOPE.
5. MATTING SHALL BE PLACED ON BANKS, STAKED, AND TRENCHED PRIOR TO INSTALLING CONSTRUCTED RIFFLE MATERIAL.

TYPICAL LARGE MATTING STAKE

LEG LENGTH	17.00 IN (43.18 CM) (TAPERED TO POINT)
WIDTH	1.5 IN (3.81 CM)
THICKNESS	1.5 IN (3.81 CM)

TYPICAL SMALL MATTING STAKE

LEG LENGTH	11.00 IN (27.94 CM)
HEAD WIDTH	1.25 IN (3.18 CM)
HEAD THICKNESS	0.40 IN (1.02 CM)
LEG WIDTH	0.60 IN (1.52 CM) (TAPERED TO POINT)
LEG THICKNESS	0.40 IN (1.02 CM)
TOTAL LENGTH	12.00 IN (30.48 CM)



PLAN VIEW

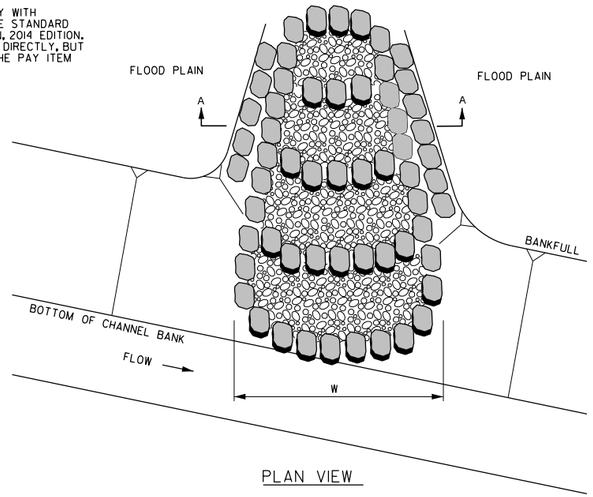
Coir Mat 70 Technical Specfications

Property	Test Method	BioD-Mat 70
Weight	ASTM D 3776	23 oz/SY (780 g/sq.m)
Dry Tensile Strength Machine direction Cross direction	ASTM D 4595	1740 lbs/ft (25.4 kN/m) 1776 lbs/ft (17.2 kN/m)
Wet Tensile Strength Machine direction Cross direction	ASTM D 4595	1488 lbs/ft (21.7 kN/m) 1032 lbs/ft (15.1 kN/m)
Elongation at Failure Wet Machine direction Cross direction	ASTM D 4595	38% 25%
Open Area	Calculated	48%
Thickness	ASTM D 1777	0.35 in (9mm)
Minimum Twine Count MD x CD (per foot)		27 x 18
Recommended Slope		> 1:1
Recommended Flow		12 fps (3.7 m/s)
Recommended Shear Stress		4.5 lbs/sq.ft (215 N/sq.m)

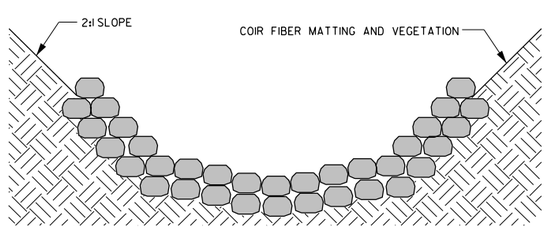
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	7	19
		STREAM RESTORATION DETAILS				

OUTLET PROTECTION

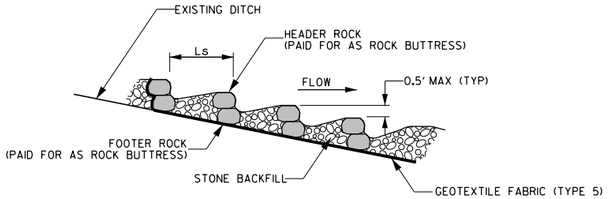
NOTES:
1. REFER TO SECTION 630, ROCK BUTTRESS, OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.
2. GEOTEXTILE FABRIC (TYPE 5) SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 625 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION. THE GEOTEXTILE FABRIC WILL NOT BE PAID DIRECTLY, BUT WILL BE INCLUDED IN THE PRICE BID FOR THE PAY ITEM "ROCK BUTTRESS".



PLAN VIEW

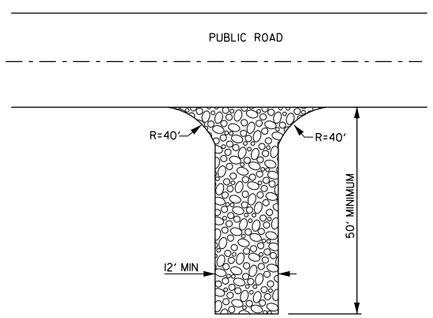


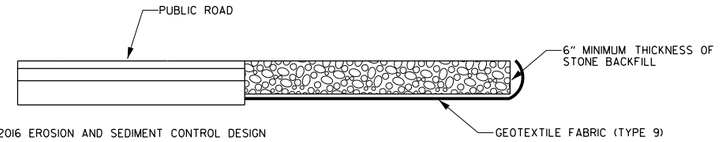
CROSS SECTION A - A



PROFILE VIEW

TEMPORARY CONSTRUCTION ENTRANCE

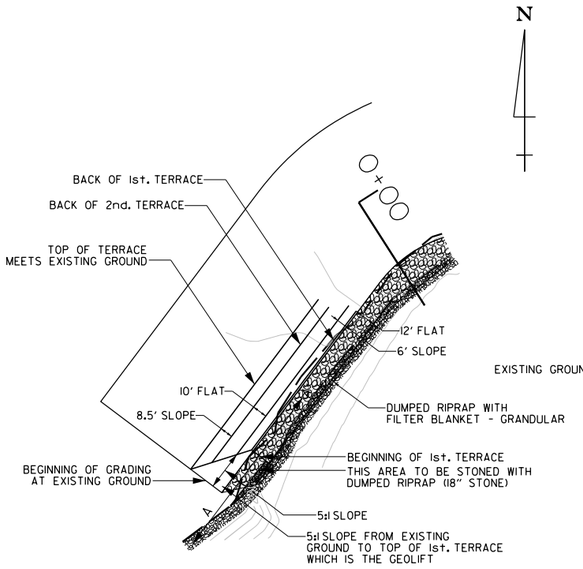




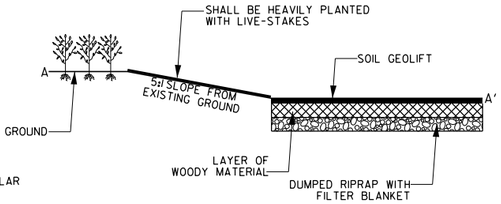
NOTES:

1. REFER TO CONSTRUCTION ACCESS "ARDOT 2016 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL".
2. GEOTEXTILE FABRIC (TYPE 9) SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 625 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. THE GEOTEXTILE FABRIC WILL NOT BE PAID DIRECTLY, BUT WILL BE INCLUDED IN THE PRICE BID FOR THE PAY ITEM "STONE BACKFILL".

TERRACE TIE-IN

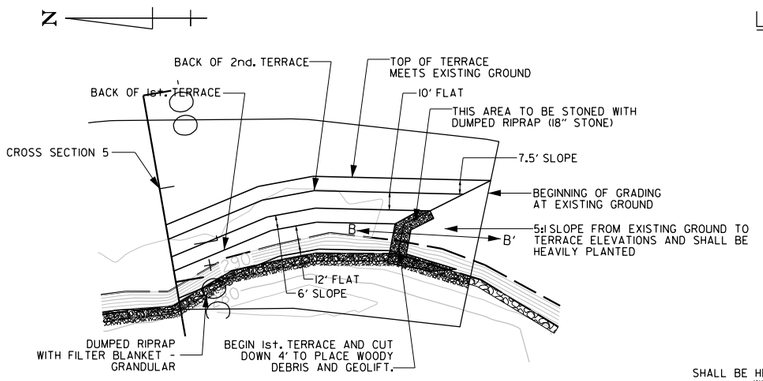


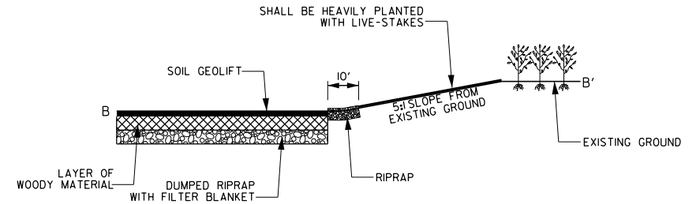
UPPER TIE-IN



CROSS SECTION A-A'

LOWER TIE-IN





CROSS SECTION B-B'

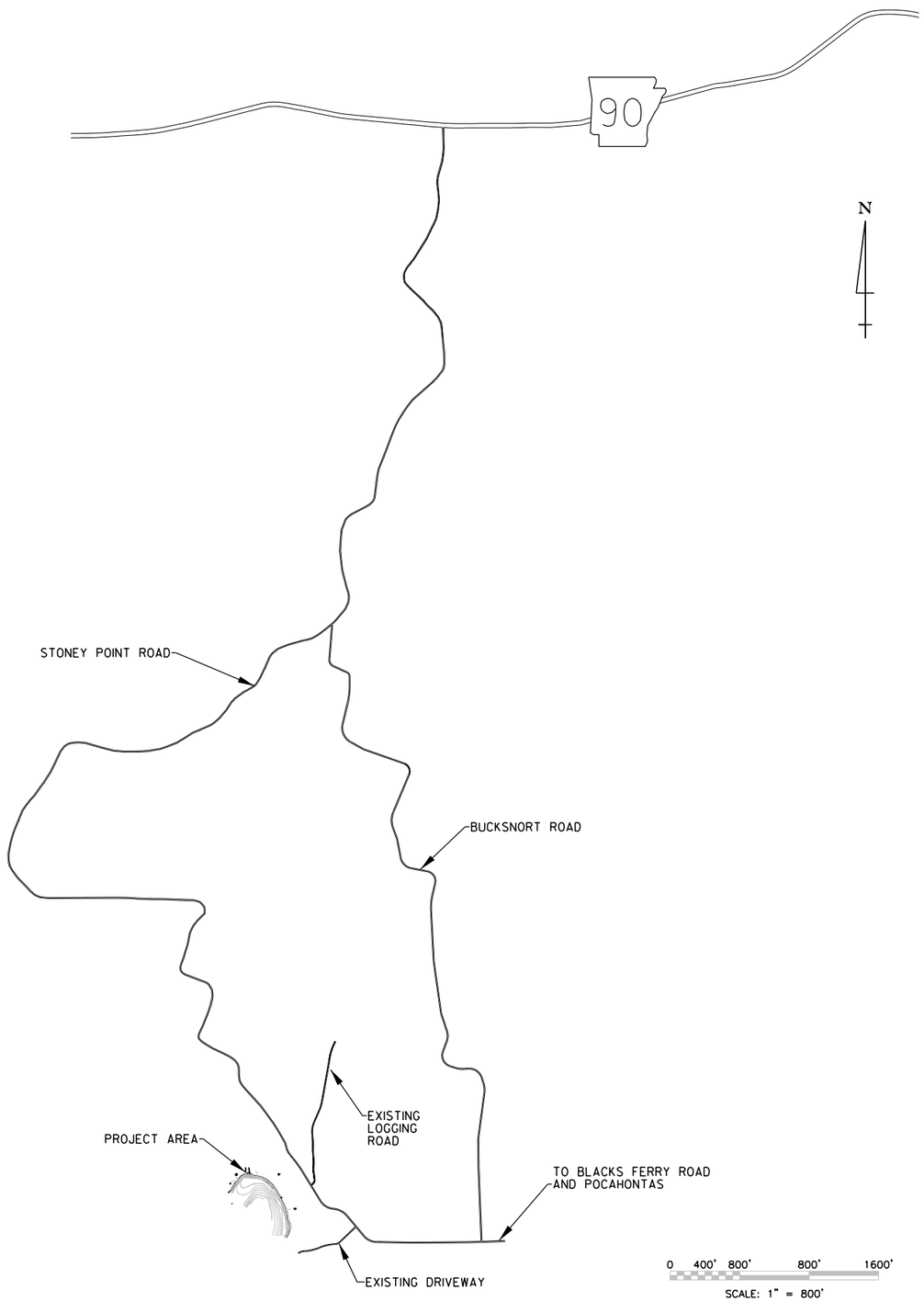
STREAM RESTORATION DETAILS

Rolyan.Chowdhury8/26/2022 9:00:21 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_IBIT2_101115_ElevenPointStreamRestoration\Design\CIVIL\Drawings\R01115_05_SD_03.dgn
REVISED DATE: $$REVDATE$$

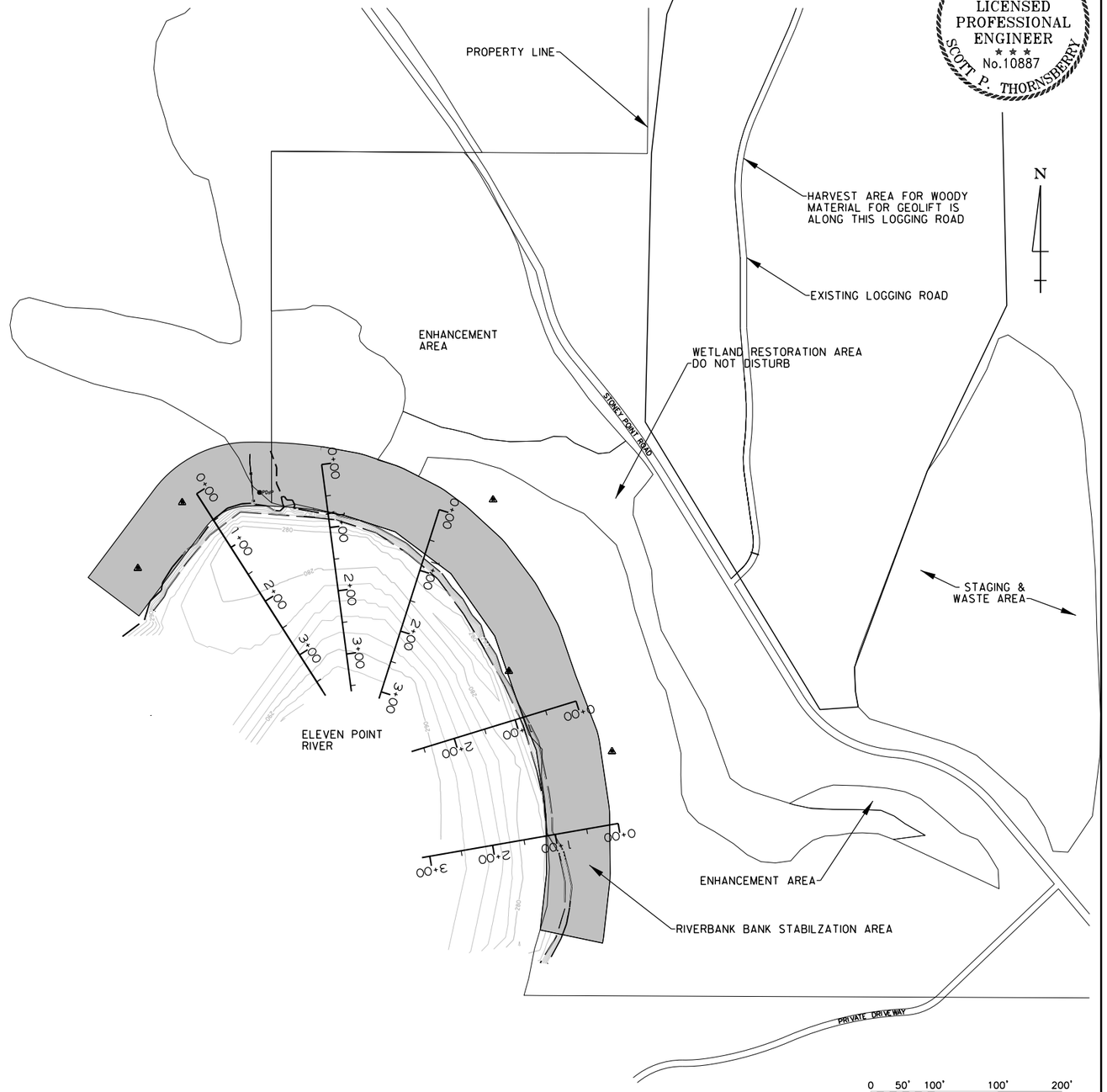
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	8	19
		PROJECT OVERVIEW				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

HWY 90 ACCESS MAP

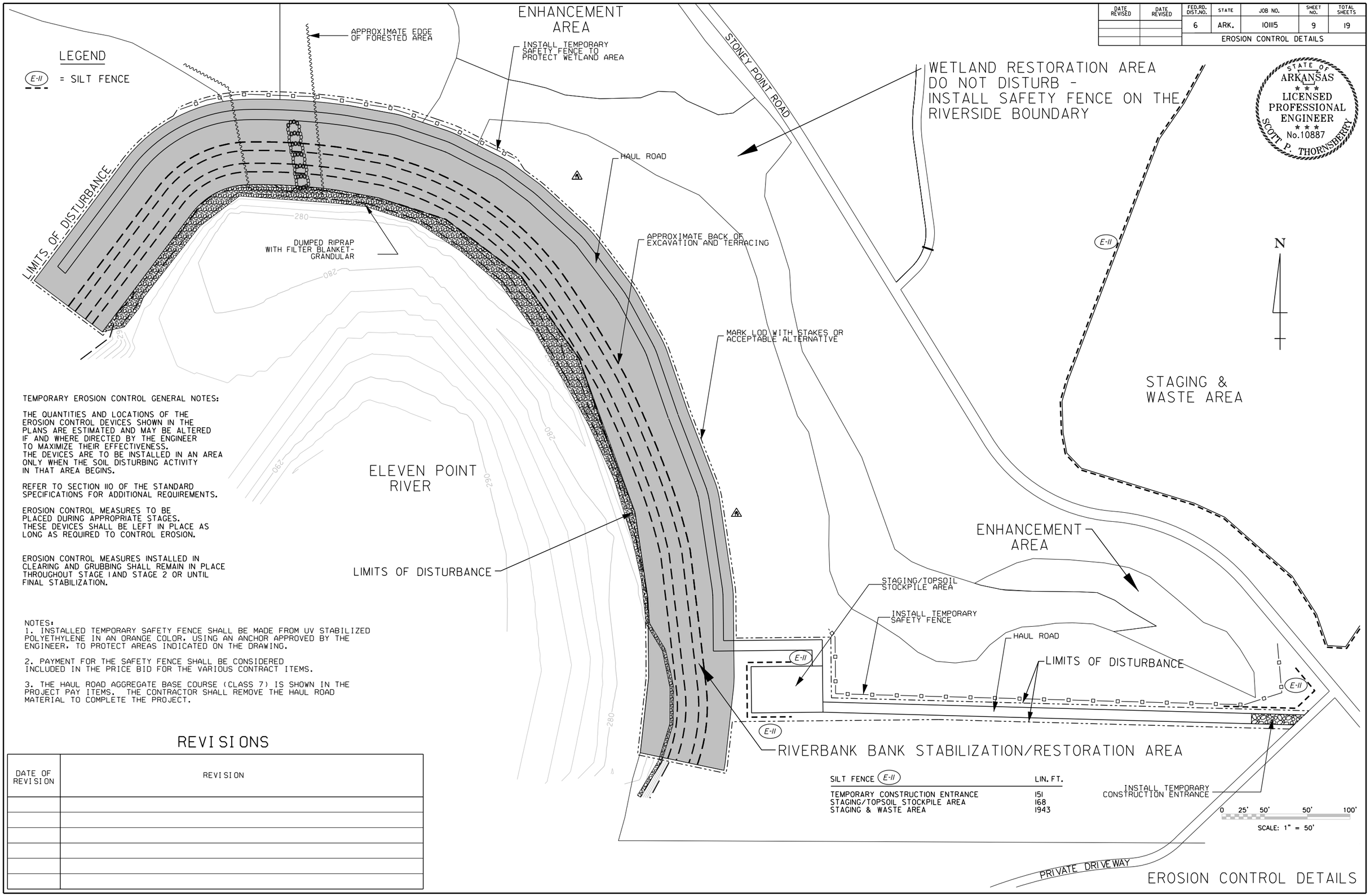


REFER TO HWY. 90 ACCESS MAP TO LEFT



PROJECT OVERVIEW

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	9	19
		EROSION CONTROL DETAILS				



SILT FENCE (E-II)	LIN. FT.
TEMPORARY CONSTRUCTION ENTRANCE	151
STAGING/TOPSOIL STOCKPILE AREA	168
STAGING & WASTE AREA	1943

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE I AND STAGE 2 OR UNTIL FINAL STABILIZATION.

NOTES:
1. INSTALLED TEMPORARY SAFETY FENCE SHALL BE MADE FROM UV STABILIZED POLYETHYLENE IN AN ORANGE COLOR. USING AN ANCHOR APPROVED BY THE ENGINEER. TO PROTECT AREAS INDICATED ON THE DRAWING.

2. PAYMENT FOR THE SAFETY FENCE SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

3. THE HAUL ROAD AGGREGATE BASE COURSE (CLASS 7) IS SHOWN IN THE PROJECT PAY ITEMS. THE CONTRACTOR SHALL REMOVE THE HAUL ROAD MATERIAL TO COMPLETE THE PROJECT.

REVISIONS

DATE OF REVISION	REVISION

Rolyon.Chowdhury@/26/2022 9:00:23 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_181772_0115_ElevenPointStreamRestoration\Design\CIVIL\Drawings\R0115_07_EC_01.dgn
REVISED DATE: $$REVDATE$$

EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	10	19
		EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY

LEGEND

E-II = SILT FENCE

ENHANCEMENT AREA

WOODY DEBRIS HARVEST AREA

WETLAND RESTORATION AREA
DO NOT DISTURB -
INSTALL SAFETY FENCE ON THE
RIVERSIDE BOUNDARY

STAGING & WASTE AREA

APPROXIMATE EDGE OF FORESTED AREA

INSTALL TEMPORARY SAFETY FENCE TO PROTECT WETLAND AREA

STONEY POINT ROAD

HAUL ROAD

LIMITS OF DISTURBANCE

DUMPED RIPRAP WITH FILTER BLANKET - GRANDULAR

APPROXIMATE BACK OF EXCAVATION AND TERRACING

MARK LOD WITH STAKES OR ACCEPTABLE ALTERNATIVE

N

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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NOTES:
1. INSTALLED TEMPORARY SAFETY FENCE SHALL BE MADE FROM UV STABILIZED POLYETHYLENE IN AN ORANGE COLOR, USING AN ANCHOR APPROVED BY THE ENGINEER, TO PROTECT AREAS INDICATED ON THE DRAWING.

2. PAYMENT FOR THE SAFETY FENCE SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

3. THE HAUL ROAD AGGREGATE BASE COURSE (CLASS 7) IS SHOWN IN THE PROJECT PAY ITEMS. THE CONSTRACTOR SHALL REMOVE THE HAUL ROAD MATERIAL TO COMPLETE THE PROJECT.

LIMITS OF DISTURBANCE

RIVERBANK BANK STABILIZATION/ RESTORATION AREA

ENHANCEMENT AREA

STAGING/TOPSOIL STOCKPILE AREA

INSTALL TEMPORARY SAFETY FENCE

HAUL ROAD

LIMITS OF DISTURBANCE

INSTALL TEMPORARY CONSTRUCTION ENTRANCE

PRIVATE DRIVE WAY

0 30' 60' 60' 120'
SCALE: 1" = 60'

EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	10115	11	19
		REVEGETATION PLAN				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

N

LIMITS OF DISTURBANCE

APPROXIMATE AREA OF GRADING

STONEY POINT ROAD

EXISTING LOGGING ROAD

EXISTING GROUND

DUMPED RIPRAP WITH GRANULAR FILTER BLANKET

ZONE UL
ZONE 1
ZONE 2
ZONE 3
ZONE 4

LIMITS OF DISTURBANCE

ELEVEN POINT RIVER

LIMITS OF DISTURBANCE

ZONE UL, EXISTING ELEVATION: SEEDED WITH PERMANENT UPLAND MIX, TEMPORARY GROUND COVER AND PLANTED WITH BARE ROOT TREES AND SHRUBS.

ZONE 1, SLOPE: SEEDED WITH BOTH PERMANENT AND TEMPORARY GROUND COVER. PLANTED WITH BARE ROOT TREES AND SHRUBS.

ZONE 2, TERRACE: SEEDED WITH BOTH PERMANENT AND TEMPORARY GROUND COVER. PLANTED WITH BARE ROOT TREES AND SHRUBS OVER THE BACK HALF OF THE TERRACE AND PLANTED WITH LIVE STAKES OVER THE FRONT HALF OF THE TERRACE.

ZONE 3, SLOPE: SEEDED WITH BOTH PERMANENT AND TEMPORARY GROUND COVER. PLANTED WITH LIVE STAKES.

ZONE 4, TERRACE: SEEDED WITH BOTH PERMANENT AND TEMPORARY GROUND COVER. PLANTED WITH LIVE STAKES.

TERRACE

2:1 SLOPE BETWEEN TERRACES

EXISTING SLOPE

0 25' 50' 50' 100'
SCALE: 1" = 50'

REVEGETATION PLAN

Rajyan.Chowdhury@26/2022 9:01:32 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_IBIT2_10115_ElevenPointStreamRestoration\Design\CIVIL\Drawings\R10115_08_RP_01.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	12	19
		CONSTRUCTION SEQUENCE				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

CONSTRUCTION SEQUENCE

Construction shall be performed in general accordance with the following sequence:

1. Prior to beginning of any land disturbing activities, notification and approval must be granted by Arkansas Department of Transportation indicating that all environmental permits have been obtained. Name of the contact person is-

Kayti Ewing
Natural Resources Division Head
ARDOT
Telephone No.- 501-569-2522.

2. The Contractor shall contact Arkansas "One Call" Center (811 or 1.800.482.8998) before any excavation as required by *Arkansas Underground Facilities Damage Prevention Act, §14-271.*

3. The Contractor will mobilize equipment and materials to the site using the construction entrances (shown on the plans) along Stoney Point Road. The rock construction entrance shall be constructed.

4. The Contractor shall utilize the haul roads and staging/stockpile areas and will store all equipment and materials in staging areas as shown on the plans.

5. A construction staging area will be established in the vicinity of the access/haul road at the lower end of the project site as shown on the plan sheets. Equipment and materials will be mobilized to this location.

6. The landward side of the haul road and "Limits of Disturbance", shall be marked with visible stakes and flagging to indicate where equipment should move up and down the project site and where no access shall be allowed. Temporary safety fence should be installed to delineate the protected wetland area, where no access shall be allowed.

7. Contractor shall not disturb stable sections of the channel, any wetland areas, or other areas outside of the limits of disturbance.

8. There is a small forested area on the property line between the ARDOT property and Mr. Tweedy' s property, along the north side of the project. ARDOT or the Engineer will mark the location of the haul road through this forested area, so that there is as little impact to the trees as possible.

9. Wood material (including trees, root wads, limbs and woody brush) should be harvested from the indicated harvest location on the north side of Stoney Point Road. This material shall be stockpiled along the riverbank in locations where it can be easily accessed for installation, but at the same time does not obstruct grading of the terraces.

10. Enough wood material should be stockpiled on site prior to beginning a new segment of terracing, so that the segment can be completed without delay.

11. Harvested wood material should be kept in as large and intact pieces as possible. Logs should be at least 10 ft. in length and longer is preferred. Root wads should have a trunk of at least 10 ft. attached so that they can be anchored into the bank. Wood should be primarily hardwoods, but softwood trees can be used as fill within the woody fill area.

12. It is important that trees be installed as soon after harvest as possible and before they have time to dry out.

13. Riverbank terracing and woody toe installation should begin at the upstream end of the project and move downstream. Construction should be done in segments of approximately 50-100 linear feet and one segment completed before opening ground and starting the next segment downstream, except for a short transition area.

14. Excavation within the grading limits will be performed so as to limit sediment migration off-site. All stockpiled soil shall have a sediment fence established between the soil and any water body.

15. Do not over excavate; only the soil that needs to be removed should be excavated in order to avoid unstable fill being used to bring the ground surface to grade.

16. Once all materials needed for finishing a segment are stockpiled near the segment, excavation may begin at the upstream end of the project. Excavation of the bank should begin at the elevation indicated and the area to be filled with woody material cut first.

17. Once grading has lowered the bank to the extent needed for access, the dumped riprap toe protection should be placed along the toe of the bank and extended up to the elevation that the woody material will be placed. Dumped riprap should be placed as shown on the typical sections and details.

18. Once the woody material "pit" is open woody material should be placed into this area, with 3 or 4 feet of woody material extending beyond the bank. Material should be compacted, and some soil added to fill voids. It is important that as much of the space be filled with woody material as possible, while being stabilized with some soil fill as needed. This woody material layer should be 3 feet thick.

19. When the woody layer is filled, the live brush stems should be laid out across the surface with 1 - 2 feet of each stem extending beyond the filled layer. A light layer of soil can be placed on top of the brush to hold it in place while the coir fiber matting is placed. Coir fiber matting should be laid on top of the front half of this woody debris layer, so that the width of the matting is aligned upstream to downstream, and the length of the matting can be unrolled up the slope. This can be done by cutting several 25-foot pieces, so that 3-4 can be installed at a time.

20. Approximately 7-feet of coir fiber matting should be placed over the front half of the wood layer and the rest of the lose matting temporarily placed at the water's edge. Then a 1-foot layer of soil should be placed on top of the matting and wood layer. This should be compacted by the excavator bucket. Then the lose matting can be pulled back over the soil layer (or lift) enveloping the soil in a "wrap" of coir matting. The matting should be pinned with hardwood stakes to the top of the soil layer. The end of the matting should be buried in a trench at the back of the soil layer (lower terrace) and under a live brush fascine to be installed in the same trench.

21. This woody layer installation and creation of the lower terrace should continue downstream until the first segment is complete. Then the grading of the 3:1 slope, the upper terrace and the final slopes to existing ground can be completed.

22. Once the lower 3:1 slope is graded, coir fiber matting should be applied to this slope and trenched in the upper terrace.

23. Prior to laying any of the matting, the soil surface should be seeded with both the perennial native seed mix and the temporary sediment control seed mix, lightly mulched with straw and then the matting placed and pinned to the soil.

24. The live brush fascine, live stakes, bare-root trees, and any available transplantable trees should be installed if construction is accomplished during the dormant season, fall or early winter. If construction is not accomplished during the dormant season, then installation of live woody material will need to be done as soon as dormant live material is available.

25. Excavated soil will need to be moved to the upstream disposal area as it is excavated from the bank, so that excess soil does not obstruct work along the bank and does not create an erosion problem. Soil will be placed on a high ground disposal site at least 50 feet from surface waters. Silt fence shall be placed down slope of the disposal site before soil is moved to the site. This soil will be sloped to match the existing ground. After the soil is leveled it will be seeded and mulched.

26. Bank and floodplain vegetation, including trees and live stakes, will be installed during the dormant season, November to April.

27. Construction entrances, staging areas and silt fences will be removed once planting is complete.

28. Immediately upon completion of bank grading, the slope will be seeded and covered with Coir Fiber Matting.

29. Upon completion of the riverbank stabilization work, all disturbed floodplain areas including staging areas and haul roads, shall be seeded and mulched. Trees shall be planted in accordance with the planting plan. Permanent seeding mixtures shall be applied as shown on the vegetation plan. Temporary seeding shall be applied in all areas susceptible to erosion (i.e. disturbed ditch banks, steep slopes, and spoil areas) such that ground cover is established within 21 working days following completion of any phase of grading. Permanent ground cover shall be established for all disturbed areas within 15 working days or 90 calendar days (whichever is shorter) following completion of construction.

30. The Contractor shall not disturb stable sections of the channel, any wetland areas, or other areas outside of the limits of disturbance.

31. The contractor shall remove the Haul Road aggregate base course prior to demobilization from the site.

32. The Contractor shall ensure that the site is free of trash and leftover materials prior to demobilization of equipment from the site.

Rajyan.Chowdhury8/26/2022 9:01:33 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_101115_ElevenPointStreamRestoration\Design\CIVIL\Drawings\R101115_09_CSQ_01.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	13	19
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY

ADVANCE WARNING SIGNS

SIGN NUMBER	DESCRIPTION	TOTAL SIGNS REQUIRED	SIGNS
		NO.	SQ. FT.
W20-1	ROAD WORK AHEAD	2	32.0
G20-2	END ROAD WORK	2	16.0
TOTAL:			48.0

PLANTING AREAS - SHOWN FOR INFORMATION ONLY

ZONE	TOTAL AREA IN ZONE	SPECIAL SEEDING (PERMANENT GROUND COVER)		SPECIAL TEMP. SEEDING (TEMPORARY GROUND COVER)	SOIL-1' DEPTH COIR WRAPPED SOIL LIFT
		RIPARIAN MIX	UPLAND MIX		
	SQ.FT	ACRE		ACRE	CU. YD.
1	15336	0.35	0.00	0.35	
2	12446	0.29	0.00	0.29	
3	19175	0.44	0.00	0.44	
4	13121	0.30	0.00	0.30	486
UL	67553	0.00	1.55	1.55	
SUBTOTALS:		1.38	1.55		
TOTALS:	127631	2.93		2.93	486

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION
			CU. YD.
ENTIRE	PROJECT	ELEVEN POINT STREAM	11799
TOTAL:			11799

NOTE: EARTHWORK QUANTITIES SHALL BE PAID AS PLAN QUANTITY.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL				
			SPECIAL SEEDING	LIME	SPECIAL MULCH COVER	WATER	SPECIAL SECOND SEEDING APPLICATION	SPECIAL TEMPORARY SEEDING	SPECIAL MULCH COVER	WATER	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING	2.93	5.86	2.93	298.9	2.93	2.93	2.93	59.8		
ENTIRE	PROJECT	ELEVEN POINT STREAM RESTORATION	3.00	6.00	3.00	306.0	3.00	3.00	3.00	61.2	2262	84
TOTALS:			5.93	11.86	5.93	604.9	5.93	5.93	5.93	121.0	2262	84

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SPECIALSEEDING
WATER.....102.0 M.G. / ACRE OF SPECIAL SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
NOTE: THE TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION ON U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

*QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

STONE BACKFILL

STATION	STATION	LOCATION / DESCRIPTION	STONE BACKFILL
			TON
ENTIRE	PROJECT	OUTLET PROTECTION	26.80
ENTIRE	PROJECT	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	23.33
TOTAL:			50.13

NOTE: REFER TO THE "TEMPORARY CONSTRUCTION ENTRANCE" AND "OUTLET PROTECTION" DETAILS ON THE "STREAM RESTORATION DETAILS" PLAN SHEET # 7.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			ACRE	
ENTIRE	PROJECT	ELEVEN POINT STREAM	4	4
TOTALS:			4	4

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
ENTIRE PROJECT	ELEVEN POINT STREAM RESTORATION	2556	2611
TOTALS:		2556	2611

*NOTES: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

FILTER BLANKER WILL BE SUITABLE FOR INSTALLATION UNDER WATER IN SECTION 816 AND AS APPROVED BY THE ENGINEER. SECTION 816 (e) SHALL NOT BE USED.

AGGREGATE BASE COURSE (CL. 7)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)	
			FEET	TON / STATION	TON
ENTIRE	PROJECT	AGGREGATE BASE COURSE TO REPAIR/MAINTAIN COUNTY ROAD AND TO CONSTRUCT HAUL ROAD	502.00	46.75	234.69
		(IF AND WHERE DIRECTED BY THE ENGINEER)			
TOTAL:					234.69

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	14	19
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

LIVE BRUSH FASCINE

ZONES	LIVE BRUSH FASCINE
	LIN.FT
1-2	1299
3-4	1231
TOTAL:	**2530**

NOTE: "LIVE BRUSH FASCINE" QUANTITIES ARE BASED ON THE LENGTH BETWEEN THE ZONES.

GEOLIFT

ZONE 4 AREA	ZONE 4 AVERAGE LENGTH	DEPTH OF GEOLIFT	GEOLIFT
SQ.FT	LIN. FT.	LIN. FT.	LIN. FT.
13121	1217	3	1217
TOTAL VOLUME OF MATERIAL:			**1217**

NOTE: REFER TO THE "GEOLIFT" SPECIAL PROVISION AND THE "GEOLIFT WITH LIVE BRUSH, LOGS, AND ROOT WADS" DETAIL ON THE "STREAM RESTORATION DETAILS" PLAN SHEET # 5. THE REQUIRED SOIL, LIVE BRANCHES, AND WOODY MATERIALS WITH ANY COUNTERWEIGHTS ARE PAID AS "GEOLIFT".

LIVE STAKES

ZONES	ZONE AREAS	LIVE STAKES
	SQ. FT.	EACH
1	15336	0
2	12446	691
3	19175	2131
4	13121	1458
TOTAL:		**4280**

NOTES: 1. THE "LIVE STAKES" QUANTITIES ARE BASED ON THE FOLLOWING RATE: 3 FT. SPACING = 1 LIVE STAKE PER 9 SQ. FT.

2. THE QUANTITY FOR ZONE 2 IS SPLIT IN HALF BETWEEN LIVE STAKES AND BARE ROOT SEEDLINGS.

3. REFER TO "LIVES STAKES " SPECIAL PROVISION.

COIR FIBER MATTING AREA

DEPTH OF COIR WRAPPED SOIL LIFT	WIDTH OF COIR WRAPPED SOIL LIFT (AVERAGE)	EXTRA COIR FIBER LENGTH FOR SOIL LIFT	SLOPE UP ZONE 3 (X:1)	HORIZONTAL WIDTH OF ZONE 3 (AVERAGE)	3D DISTANCE ALONG WIDTH OF ZONE 3 (AVERAGE)	HORIZONTAL DISTANCE OF ZONE 2 (AVERAGE)	SLOPE UP ZONE 1 (X:1)	HORIZONTAL WIDTH OF ZONE 1 (AVERAGE)	3D DISTANCE ALONG WIDTH OF ZONE 1 (AVERAGE)	LENGTH OF RESTORATION (AVERAGE)	COIR FIBER MATTING	
LIN. FT.				LIN. FT.							SQ.FT.	SQ.YD.
1	12	3	2.00	6	13.4164	10.00	2.00	8.10	18.1122	1264	89148.1504	9905
TOTAL:												**9905**

NOTES: 1. REFER TO THE "GEOLIFT" SPECIAL PROVISION AND "STREAM RESTORATION DETAILS" PLAN SHEET # 5 FOR PLACEMENT OF THE COIR FIBER MATTING "WRAP" OF THE 1 FOOT GEOLIFT SOIL AND EXTENTION AROUND THE LIVE FASCINE.

2. REFER TO PLAN SHEET # 11 FOR ZONES LABELS.

BARE ROOT SEEDLINGS

ZONES	ZONE AREAS	BARE ROOT SEEDLINGS
	ACRES	EACH
1	0.67	239
2	0.88	97
3	0.53	0
4	0.94	0
UL		1055
TOTAL:		**1391**

NOTES: 1. THE "BARE ROOT SEEDLINGS" QUANTITIES ARE BASED ON THE FOLLOWING RATE: 680 SEEDLINGS PER ACRE.

2. THE QUANTITY FOR ZONE 2 IS SPLIT IN HALF BETWEEN "LIVE STAKES" AND "BARE ROOT SEEDLINGS".

3. REFER TO "BARE ROOT SEEDLINGS" SPECIAL PROVISION.

ROCK BUTTRESS

STATION	LOCATION	ROCK BUTTRESS
		CU. YD.
ENTIRE PROJECT	OUTLET PROTECTION	30
TOTAL:		**30**

NOTE: REFER TO THE "OUTLET PROTECTION" DETAIL ON THE "STREAM RESTORATION DETAILS" PLAN SHEET # 7. ALSO, REFER TO SECTION 630, "ROCK BUTTRESS" AND SECTION 625, "GEOTEXTILE FABRIC" OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION. GEOTEXTILE FABRIC WILL NOT BE PAID DIRECTLY, BUT WILL BE INCLUDED IN THE PRICE BID FOR THE PAY ITEM "ROCK BUTTRESS".

REMOVING AND REPLACING TOPSOIL

STATION	STATION	*REMOVING AND REPLACING TOPSOIL
		CU. YD.
ENTIRE	PROJECT	1787
TOTAL:		**1787**

* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.

REFER TO "REMOVING AND REPLACING TOPSOIL" SPECIAL PROVISION.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	15	19
		SUMMARY OF QUANTITIES & REVISIONS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	4	ACRE
201	GRUBBING	4	ACRE
SP & 207	STONE BACKFILL	50	TON
SS, & 210	UNCLASSIFIED EXCAVATION	11799	CU. YD.
SP & 210	REMOVING AND REPLACING TOPSOIL	1787	CU. YD.
SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	235	TON
601	MOBILIZATION	1.00	LUMP SUM
602	FURNISHING FIELD OFFICE	1	EACH
SS & 604	SIGNS	48	SQ. FT.
SP & 620	LIME	12	TON
SP & 620	SPECIAL SEEDING	5.93	ACRE
SP, SS, & 620	SPECIAL MULCH COVER	11.86	ACRE
620	WATER	725.9	M. GAL.
SP & 621	SPECIAL TEMPORARY SEEDING	5.93	ACRE
621	SILT FENCE	2262	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	84	CU. YD.
SP & 623	SPECIAL SECOND SEEDING APPLICATION	5.93	ACRE
630	ROCK BUTTRESS	30	CU. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
816	FILTER BLANKET	2611	SQ. YD.
SS & 816	DUMPED RIPRAP	2556	CU. YD.
SP	BARE ROOT SEEDLINGS	1391	EACH
SP	COIR FIBER MATTING	9905	SQ. YD.
SP	GEOLIFT	1217	LIN. FT.
SP	LIVE BRUSH FASCINE	2530	LIN. FT.
SP	LIVE STAKES	4280	EACH

REVISIONS

DATE	REVISION	SHEET NUMBER

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	16	19
		PLAN SHEET				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

N

PROPOSED OUTLET PROTECTION

CROSS SECTION 1
N 724,466.79
E 1,577,616.09

CROSS SECTION 2
N 724,512.74
E 1,577,812.34

CROSS SECTION 3
N 724,441.82
E 1,577,996.89

CROSS SECTION 4
N 724,141.45
E 1,578,211.52

CROSS SECTION 5
N 723,949.49
E 1,578,277.57

CROSS SECTION 1
N 724,150.08
E 1,577,818.37

CROSS SECTION 2
N 724,156.69
E 1,577,858.84

CROSS SECTION 3
N 724,145.43
E 1,577,902.44

CROSS SECTION 4
N 724,062.28
E 1,577,953.47

CROSS SECTION 5
N 723,895.65
E 1,577,969.70

3000 3001 3002 3003 3004 3005 3006 3007 3008

1100 1102 1104 1106 1108

STONEY POINT ROAD

TO TREE & WOODY DEBRIS HARVEST AREA

EXISTING GATE

THORNTON A. TWEEDY
PO BOX 715
3942 STONEY POINT RD
POCAHONTAS, AR 72455-0715
PARCEL ID 001-05966-000

RONALD T TWEEDY
6571 BLACKS FERRY RD
IMBODEN, AR 72434-9472
PARCEL ID 001-05968-000

ARKANSAS STATE HIGHWAY COMMISSION
PARCEL ID 001-05953-000

BRIAN OR CALLY SHORE
3619 STONEY POINT RD
POCAHONTAS, AR 72455-5277
PARCEL ID 001-05969-000

Temporary Construction Easement Table			
Point Name	Northing	Easting	Description
3000	724528.3681	1577699.8789	Temporary Construction Easement
3001	724481.9908	1577544.8620	Temporary Construction Easement
3002	724526.7221	1577597.5048	Temporary Construction Easement
3003	724555.2577	1577659.9779	Temporary Construction Easement
3004	724552.4133	1577733.6010	Temporary Construction Easement
3005	724442.7402	1577733.6695	Temporary Construction Easement
3006	724442.1562	1577678.2191	Temporary Construction Easement
3007	724415.0613	1577637.0467	Temporary Construction Easement
3008	724268.1747	1577526.6006	Temporary Construction Easement

SURVEY CONTROL COORDINATES

Project Name: s101003
Date: 12/23/2019
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	731973.5401	1569114.6295	338.595	CTL	STD ARDOT CAP STAMPED PN: 1
2	732140.6478	1569838.8970	310.841	CTL	STD ARDOT CAP STAMPED PN: 2
3	732230.4500	1570488.0663	310.646	CTL	STD ARDOT CAP STAMPED PN: 3
4	732336.4930	1571317.0655	331.741	CTL	STD ARDOT CAP STAMPED PN: 4
5	732655.3945	1571982.5296	369.729	CTL	STD ARDOT CAP STAMPED PN: 5
900	732066.5794	1569328.9600	330.106	TBM	CHISELED SQUARE IN HW
901	732266.2321	1570572.1853	310.876	TBM	RBR W/ALUM CAP CHISELED SQUARE
902	732391.9013	1571472.6126	341.045	TBM	CHISELED SQUARE IN HW
999	693948.8166	1532084.8551	326.548	BM	NGS BM N 316
1100	724454.6010	1577593.3741	295.87	TV	60d NAIL
1102	724189.6761	1578106.1721	294.94	TV	60d NAIL
1104	724351.2312	1577523.8900	295.63	TV	60d NAIL
1106	724458.8350	1578081.3744	297.06	TV	60d NAIL
1108	724063.7016	1578268.0222	293.72	TV	60d NAIL

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 1.000011842 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s101003gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS STATIC OBSERVATIONS
CONVERGENCE ANGLE: 00-30-36 RIGHT AT LAT N 36-20-30 LON W091-07-24
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

NOTES:
1. THE PAY ITEM "ROADWAY CONSTRUCTION CONTROL" HAS BEEN INCLUDED IN THE PROJECT TO PAY FOR CONSTRUCTION STAKE OUT AND ANY REQUIRED SURVEY.
2. EXISTING PROPERTY OWNERS ARE SHOWN ON THIS SHEET.

0 25' 50' 50' 100'
SCALE: 1" = 50'

PLAN SHEET

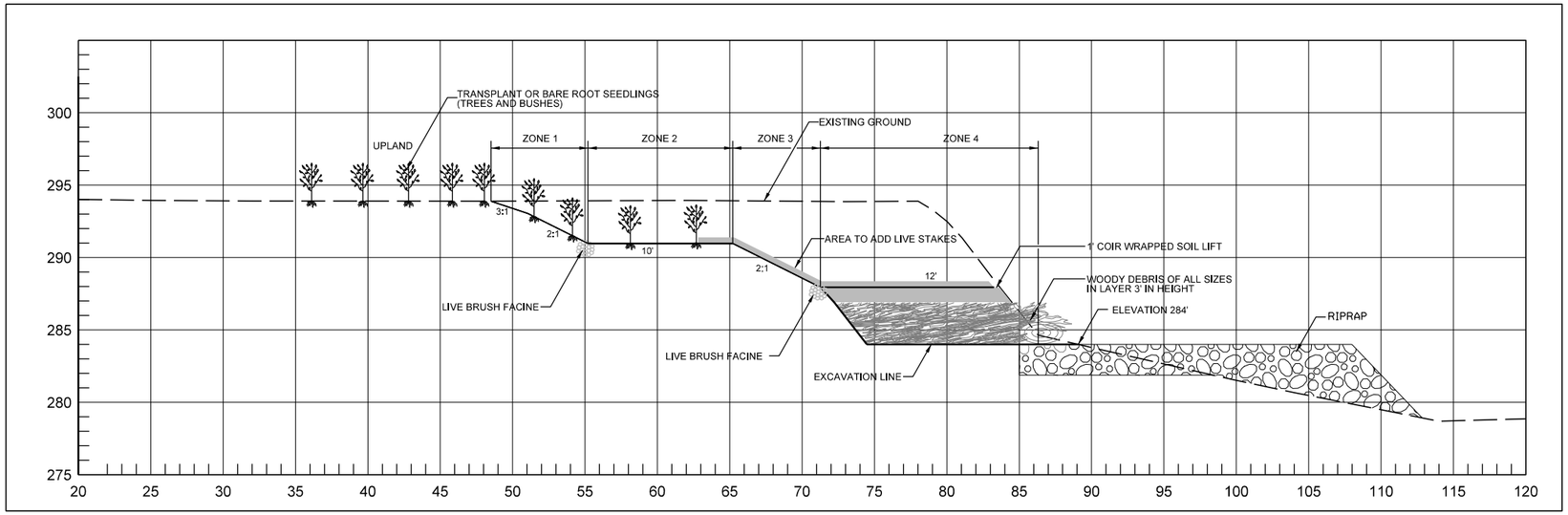
Rolyan.Chowdhury@26/2022 9:04:11 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_IB1T2_I0115_ElevenPointStreamRestoration\Design\CIVIL\Drawings\R0115_IL_PV_01.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	17	19
		CROSS SECTIONS				

TYPICAL RIFFLE, POOL, AND BANKFULL BENCH CROSS SECTIONS

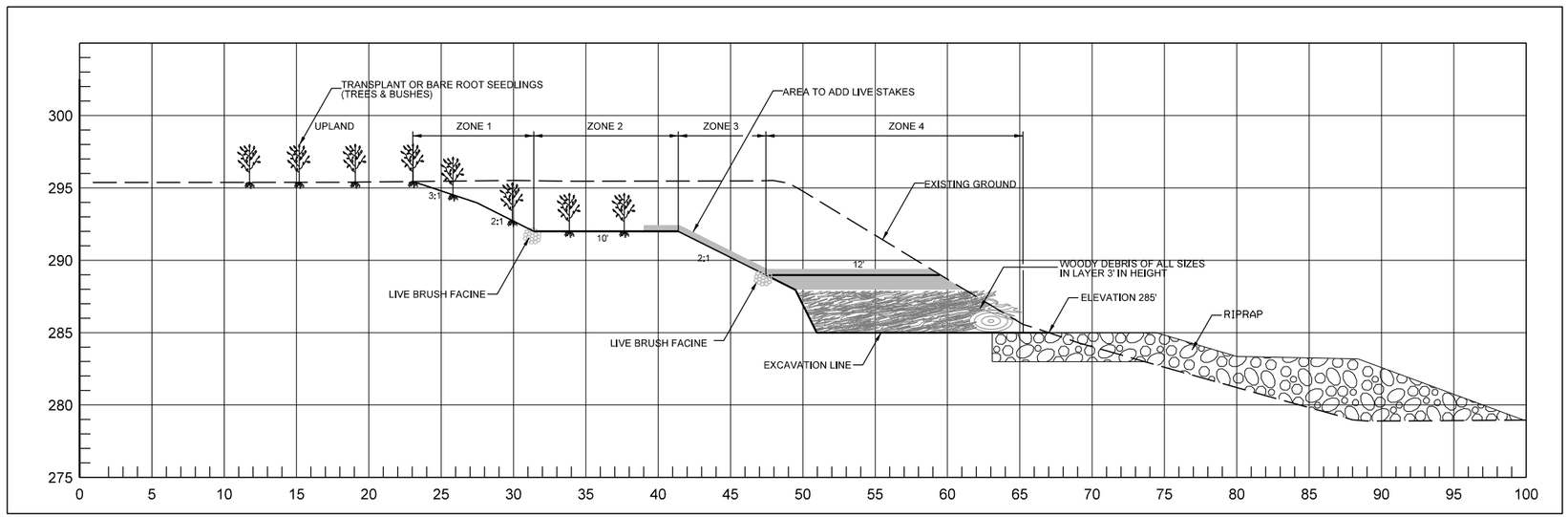
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY

CROSS SECTION 2



H:V

CROSS SECTION 1



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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	18	19
		CROSS SECTIONS				

STATE OF ARKANSAS
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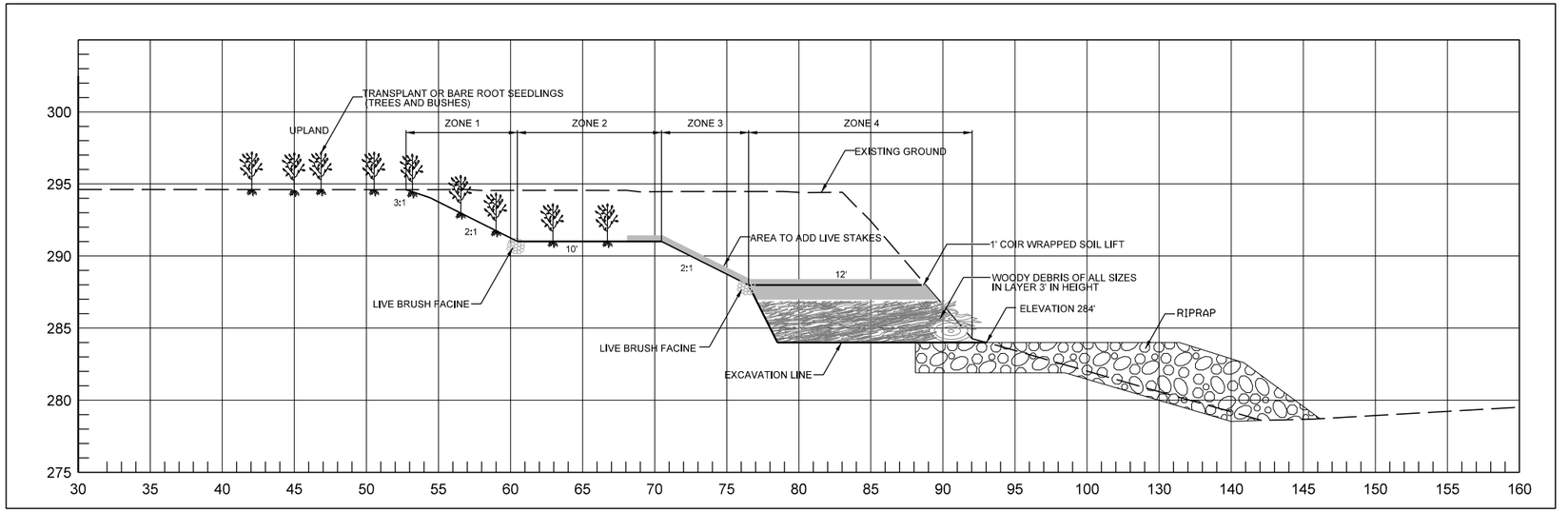
SCOTT P. THORNSBERRY

TYPICAL RIFFLE, POOL, AND BANKFULL BENCH CROSS SECTIONS

CROSS SECTION 4



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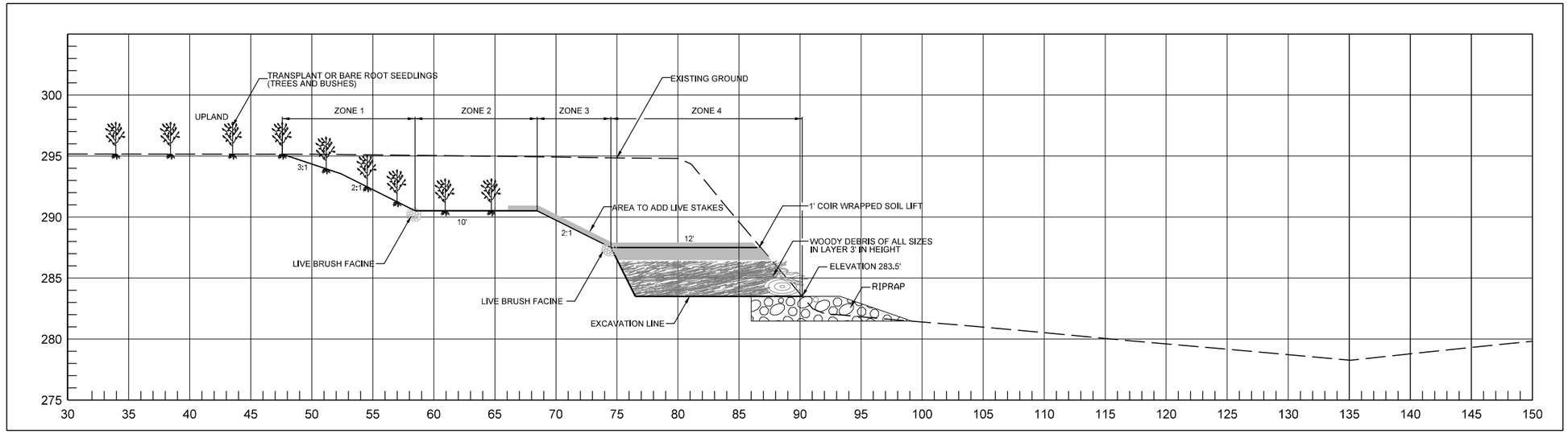
CROSS SECTION 3



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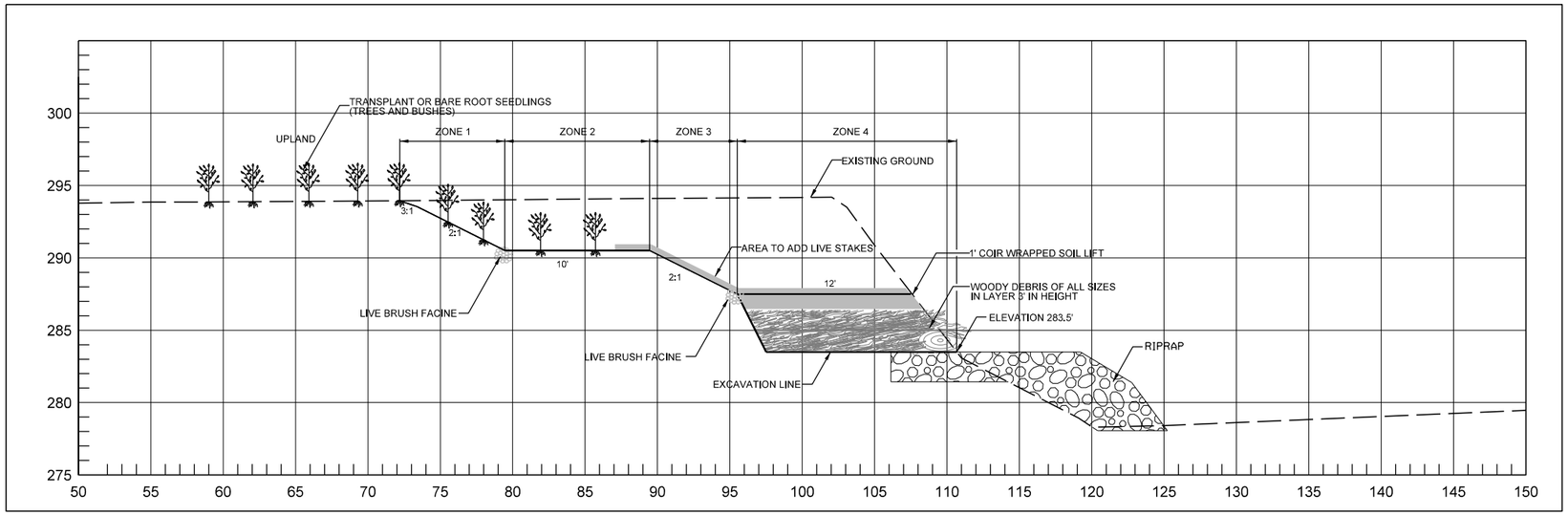
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101115	19	19
		CROSS SECTIONS				

TYPICAL RIFFLE, POOL, AND BANKFULL BENCH CROSS SECTIONS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887

CROSS SECTION 5



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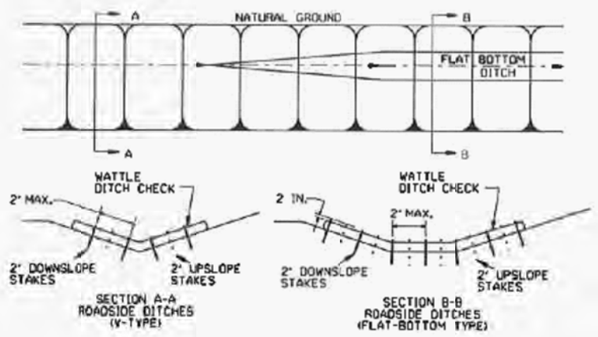
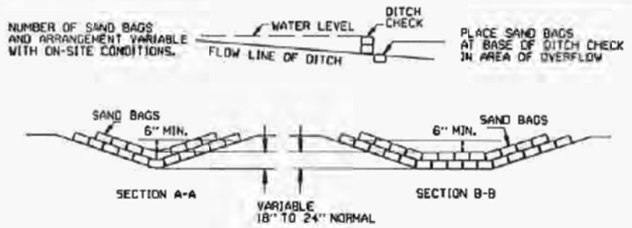
CROSS SECTIONS

GENERAL NOTES

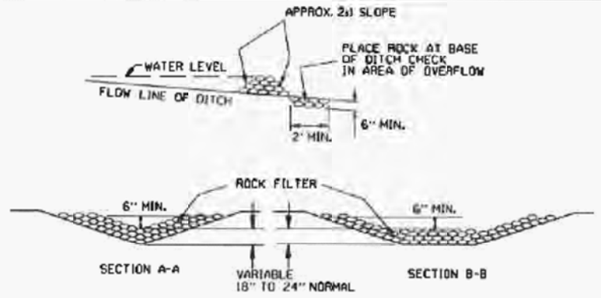
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

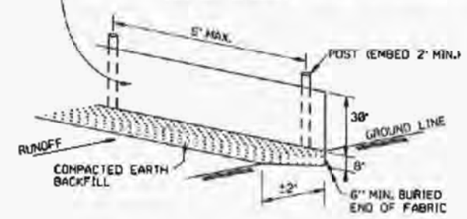


ROCK DITCH CHECK (E-6)

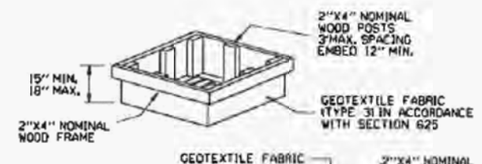
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

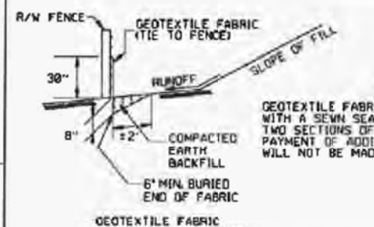
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

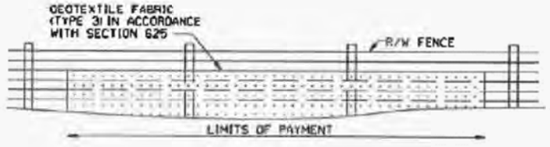


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



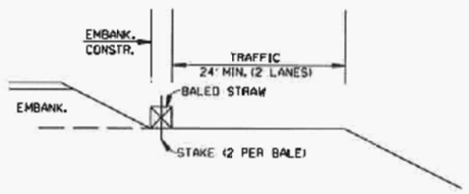
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

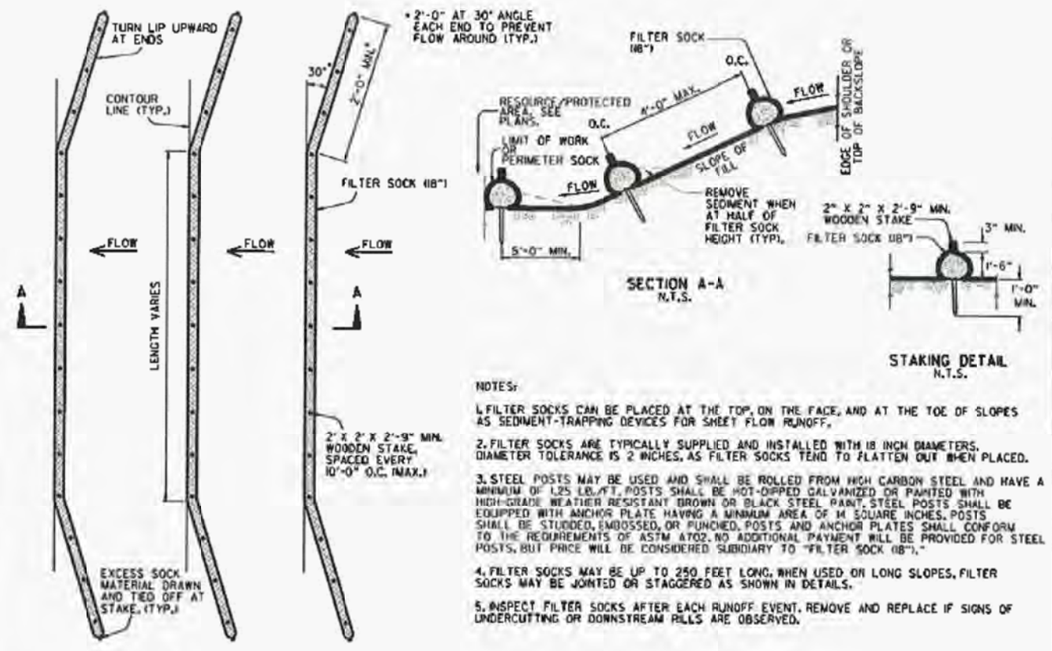
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

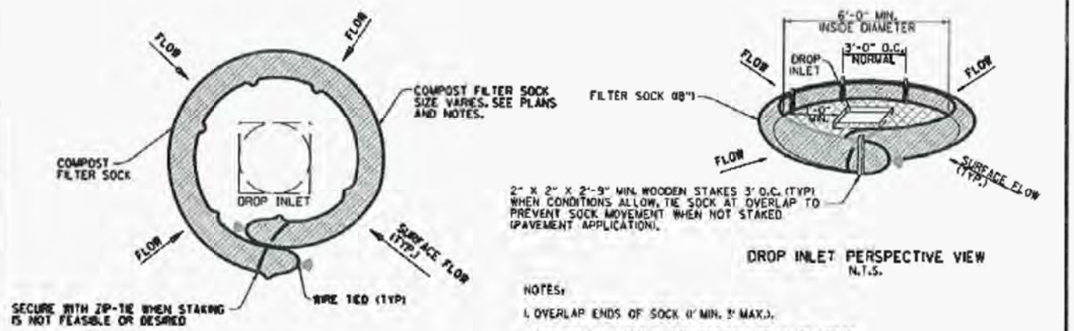
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES. AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK 0' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-04-82	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-1

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION

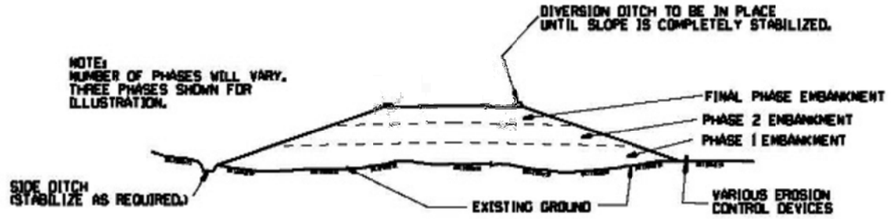
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE I EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS. DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE I EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

DATE	REVISION	FILMED
11-23-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3